# EPA Registration No. 4787-26 Vol. 1



# UNITED STATES ENVIRONMENTAL PROTECTION AGENCY WASHINGTON, D.C. 20460

NOV 3 0 2000

OFFICE OF PREVENTION, PESTICIDES AND TOXIC SUBSTANCES

Mr. Rick Stevens Cheminova Agro A/S 1700 Route 23, Suite 300 Wayne, NJ 07470

Dear Mr. Stevens:

Subject: Glyphosate Technical (Change to Nominal Concentration and Add Residential Sites)
EPA Registration No. 4787-26
Your Application Dated September 25, 2000

The labeling referred to above submitted in connection with registration under the Federal Insecticide, Rodenticide, and Fungicide Act as amended is acceptable. The amended labeling supercedes all previously accepted ones. A stamped copy of labeling is enclosed for your records.

Sincerely,

James A. Tompkins
Product Manager 25
Herbicide Branch
Registration Division (7505C)

## **Glyphosate Technical**

For Manufacturing Use Only



#### **ACTIVE INGREDIENT:**

Glyphosate, (Glycine, N-(phosphonomethyl)-),

OTHER INGREDIENTS:

TOTAL:

98.3% \_<u>1.7%</u> 100.0%

## KEEP OUT OF REACH CHILDREN. DANGER

#### **FIRST AID**

Have the product container or label with you when calling a poison control center or doctor, or going for treatment.

IF SWALLOWED: -Call a poison control center or doctor immediately for treatment advice.

-Have person sip a glass of water if able to swallow.

-Do not induce vomiting unless told to by poison control center or doctor.

-Do not give anything by mouth to an unconscious person.

IF ON SKIN OR

CLOTHING:

-Take off contaminated clothing.

-Rinse skin immediately with plenty of water for 15-20 minutes.

-Call a poison control center or doctor for treatment advice.

IF IN EYES:

-Hold eye open and rinse slowly and gently with water for 15-20 minutes.

-Remove contact lenses, if present, after the first 5 minutes, then continue

rinsing.

-Call a poison control center or doctor for treatment advice.

**NOTE TO PHYSICIAN:** Probable mucosal damage may contraindicate the use of gastric lavage.

IN CASE OF A MEDICAL EMERGENCY, CALL TOLL FREE DAY OR NIGHT, 1-800-228-5635, EXT. 153

### ACCEPTED

NOV 3 0 2000

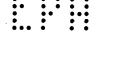
Under the Federal Insecticide, Fungicide, and Rodenticide Act, as amended, for the pesticide registered under EPA Reg. No 4787-26 See side panel for additional precautionary statements.

#### PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS KEEP OUT OF REACH OF CHILDREN

#### **DANGER**

Corrosive. Causes irreversible eye damage. Harmful if absorbed through skin. Do not get in eyes or on chlothing. Avoid contact with skin. Wear goggles or face shield. Wash thoroughly with soap and water after handling. Remove contaminated clothing and wash clothing before reuse.



#### **ENVIRONMENTAL HAZARDS**

Do not contaminate water when cleaning equipment or disposing of wastes.



The active ingredient in this product is a non-selective broad spectrum herbicide. Do not handle or use in a manner that can result in accidental contact with desirable vegetation.

EPA Reg. No.: 4787-26

EPA Est. No.: 4787-DN-1

Manufactured by CHEMINOVA A/S P.O. Box 9 DK-7620 LEMVIG, DENMARK

<b>Net Contents:</b>	gallons	(	liters)
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#### **DIRECTIONS FOR USE**

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

For use by commercial pesticide formulators.

For formulation into end-use herbicide products intended for the following uses:

(1) Fallow ground, pastures and sods, noncrop areas including: rights of way, industrial, recreational and public areas, forestry site preparation and release programs, site preparation or directed sprays to the floor of ornamental nurseries and Christmas tree farms, rights of way (ROW), Conservation Reserve Program (CRP), turfgrasses and grasses for seed production; Residential sites;

<u>Row Crops:</u> corn, cotton, peanuts, sorghum, soybeans, sugarcane, barley, buckweat, millet, oats, rice, rye, triticale, wheat, wild rice;

<u>Citrus:</u> Calamondin, chironja, citron, grapefruit, kumquat, lemon, lime, mandarin orange, orange, pummelo, tangelo, tangerine, tangors;

<u>Tree Nuts:</u> almond, beechnut, Brazil nut, butternut, cashew, chestnut, chinquapin, filbert (hazelnut), hickory nut, macadamia nut, pecan, pistachio, walnut;

Vine Crops: grapes and kiwi fruit;

<u>Tree Fruits:</u> apple, apricot, cherry, loquat, mayhaw, nectarine, olive, peach, pear, plum/prune, quince;

<u>Vegetables:</u> artichoke (Jerusalem), asparagus, beans, (all), beet greens, beets (red, sugar), broccoli (all), Brussels sprouts, cabbage (all), cabbage (Chinese), cantaloupe, carrot, cauliflower, casaba melon, celery, chard (Swiss), chicory, collards, crenshaw melon, cucumber, eggplant, endive, garlic, gourds, ground cherry, honeydew melon, honey ball melon, horseradish, kale, kohlrabi, leek, lentils, lettuce, mango melon, melons, muskmelon, mustard greens, okra, onion, rape greens, parsley, parsnips, peas (all), pepper (all), Persian melon, potato (Irish and sweet), pumpkin, radish, rhubarb, spinach, squash, tomatillo, tomato, turnip, watercress, watermelon, yams;

<u>Small Fruits and Berries:</u> blackberry, blueberry, boysenberry, cranberry, currant, dewberry, elderberry, gooseberry, huckleberry, loganberry, olallieberry, raspberry;



**Forage Crops:** alfalfa, forage grasses, forage legumes;

Tropical Crops: acerola, atemoya, avocado, banana (plantians), breadfruit, canistel, carambola, cherimoya, cocoa beans, coffee, dates, figs, genip, guava, jaboticaba, jackfruit, longan, lychee, mango, papaya, passion fruit, persimmons, pineapple, pomegranate, sapodilla, sapote (black, mamey, white) soursop, sugar apple, tamarind tea;

- (2) Uses for which the USEPA has accepted the required data and/or citations of data that the formulator has submitted in support of registration; and
- (3) Uses for experimental purposes that are in compliance with USEPA requirements.

#### STORAGE AND DISPOSAL

Do not contaminate water, food or feed by storage and disposal.

**Pesticide Storage:** Store in original container only. Do not store near heat or open flame. In case of spill or leak, sweep up and dispose of waste.

**Pesticide Disposal:** Open dumping is prohibited. Waste resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

**Container Disposal:** Triple rinse (or equivalent). Then offer for recycling, or dispose of in a sanitary landfill or by other procedures approved by state and local authorities.

#### WARRANTY LIMITATIONS AND DISCLAIMER

CHEMINOVA warrants that the material contained herein conforms to the chemical description on the label, that it will pass without objection in the trade under the contract description, and that such product will be delivered free from any lawful security interest, lien or encumbrance. CHEMINOVA MAKES NO OTHER EXPRESS WARRANTIES OF ANY KIND AND DISCLAIMS ANY AND ALL IMPLIED WARRANTIES, INCLUDING BUT NOT LIMITED TO WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. NO ORAL OR WRITTEN INFORMATION OR ADVICE GIVEN BY CHEMINOVA, ITS DISTRIBUTORS, AGENTS OR EMPLOYEE SHALL CREATE WARRANTY OR IN ANY WAY INCREASE THE SCOPE OF THIS WARRANTY, AND THE BUYER MAY NOT RELY ON SUCH INFORMATION OR ADVICE.

Actions: 9/22/00 KM Revise to add residential uses

Label Code: TBD Submit to EPA 9/25/00

Replaces label code:

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EFA Form 4870-13 (\$-75)

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Please read instructions on rever	rse before completing form. Form	Approved, OMB	No. 2070-0060, Approval	expires 05-31-98	<u> </u>
EPA	United States		☐ Registra	tion	OPP Identifier Number
LIA	<b>Environmental Protection</b>	Agency		nent	264768
	Washington, DC 20460		☐ Other		204700
	Арр	lication for Pe	esticide - Section 1		
1. Company/Product Number			roduct Manager		3. Proposed Classification
4787-26		Jim T	ompkins	25	
4. Company/Product (Name)  Glyphosate Technica		PM#	cide Branch		None Restricted
Glypnosate Technica	41	Herbi	cide Branch		
5. Name and Address of Applie	cant (Include ZIP Code)		ited Review. In accordar identical in composition :		on 3(c)(3)(b)(I), my product is
Cheminova Inc. 1700 Route 23		EPA R	eg. No. Glyphosa	te	
			-B. 1101 <u></u>	100	
Wayne, NJ 07470  Check if this is a new ad	Idrace	Produc	t Name <u>524-420</u>		3/2000
Check it this is a new ad-	uicss	Section	on – II		E
Amendment - Explain	below.	000-1-10-10-00-10-0	Final printed lab	els in response to Age	ency letter dated
	nse to Agency letter dated		"Me Too" Applie		
Notification - Explain			Other - Explain I		
	litional page(s) if necessary. (	For Section I a			
Amendment to add	residential use sites and	convert label	active ingredient	declaration to	nominal concentration.
		Section	n – III		
Material This Product W					2 T
Child-Resistant Packaging Yes*	Unit Packaging Yes		Water Soluble Packa	aging	2. Type of Container  Metal
No No	☐ No		No No		Plastic
*Certification must be	Policy and	No. per	If "Yes"	No. per	Glass
submitted	Unit Packaging wgt.		Package wgt.	container	Paper
					Other (Specify)
3. Location of Net Contents	s Information 4. Size	(s) Retail Containe		5. Location of I	
Label	Container			On Label	
	in the second se			On labeling	g accompanying product
6. Manner in Which Label i		Lithograph Paper glued Stenciled	Other		
			on – IV		
1. Contact Point (Complete	items directly below for identificatio	n of individual to b	ne contacted, if necessary,	to process this appli	cation)
Name		Title	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	- 1	Telephone No. (Include Area Code)
Rick Stevens					072 207 ((00 - 229
	0.10		Regulatory Affairs		973-305-6600 x238  6. Date Application Received
	Certifi I have made on this form and all atta misleading statement may be punish	chments thereto ar			(Stamped)
2. Signature	21	3. Title			• • • • • • • • • • • • • • • • • • • •
(85,0V0S	Stevens	Managar I	Regulatory Affairs		
4. Typed Name	Home	5. Date	Acgulatory Atlants		
Rick Stevens		Septembe	r 25, 2000		

EPA Form 8570-1 (Rev. 8-94) Previous editions are obsolete Copy

White- EPA File Copy (original). Vellow- Applicant



Cheminova, Inc. Oak Hill Park 1700 Route 23, Suite 300 Wayne, New Jersey 07470 Phone: 973-305-6600 Fax: 973-305-1382 Customer service: 1-800-548-6113

September 25, 2000

By Federal Express

Office of Pesticide Programs
Document Processing Desk (AMEND)
U.S. Environmental Protection Agency
Room 258, Crystal Mall 2
1921 Jefferson Davis Highway
Arlington, Virginia 22202

ATTENTION: Jim Tompkins

Herbicide Branch

SUBJECT:

Application for Amendment

Glyphosate Technical (EPA Reg. No. 4787-26)

Dear Mr. Tompkins:

As we recently discussed, we are applying for an amendment to Cheminova's Glyphosate Technical label to add residential use sites. Since we have already cited the data required for residential uses with our initial application for registration, there is no additional data citation necessary at this time.

We would also like to take this time to amend our label to reflect the nominal active ingredient concentration that is supported by our April 20, 1995 CSF on file with the Agency (copy included with this submission). This reflects a change from the lower certified limit of 96% to the nominal concentration of 98.3%. Since this CSF has already been approved by the Agency, no additional review is necessary.

Finally, we have updated the First Aid language on this label to reflect PR Notice 2000-3.

Please find enclosed the following in support of this application:

- Application for Pesticide (OPP Id. No. 264768)
- Copy of our April 20, 1995 Confidential Statement of Formula
- Five copies of the draft labeling

If there are any questions concerning the enclosed amendment application or if you require any additional information, please contact me at 973-305-6600 x238. Thank you for your assistance.

Sincerely,

Rick Stevens

Manager Regulatory Affairs

**Enclosures** 



Cheminova, Inc. Oak Hill Park 1700 Route 23, Suite 300 Wayne, New Jersey 07470 Phone: 973-305-6600 Fax: 973-305-1382 Customer service: 1-800-548-6113

October 18, 2000

Document Processing Desk (APPL)
Office of Pesticide Programs
U.S. Environmental Protection Agency
Room 266A, Crystal Mall #2
1921 Jefferson Davis Hwy
Arlington, VA 22202

[via FedEx]

Attention:

James A. Tompkins (H7505C)

Vickie Walters PM Team 25

Subject:

Glyphosate Technical EPA Reg. No. 4787- 26

Data Matrix to add Residential Uses

Dear Mr. Tompkins/Ms. Walters,

Per our phone discussions and your email of 4 October Vickie, enclosed is a Data Matrix addressing data needs for adding "residential uses" to the Glyphosate Technical label. Also enclosed is EPA Form 8570-34 (Certification with Respect to Citation of Data). EPA should have a Letter of Authorization from Monsanto on file allowing EPA to access Monsanto data for Cheminova. I trust from this standpoint that a General Offer to Pay should not be needed, since Monsanto has given Cheminova access to their data.

Thank you in advance for your consideration of this revised proposed label to add residential uses to the Glyphosate Technical label. If you have any questions or require additional information relative to Glyphosate Technical, please call me at (973) 305-6600, x238; my e-mail address is: <a href="mailto:rrs@cheminova.com">rrs@cheminova.com</a>

Sincerely,

Rick Stevens

Manager Regulatory Affairs

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Cheminova

**Enclosures** 



#### UNITED STATES ENVIRONMENTAL PROTECTION AGENCY 401 M Street, SW Washington, DC 20460

Paperwork Reduction Act Notice: The public reporting burden for this collection of information is estimated to average 1.25 hours per response for registration and 0.25 hours per

		Director, OPPE Information Management Division (2137), U.S. Environmental						
Do not send the completed form to this address.								
Certificat	tion with Respect to Cita	ation of Data						
Applicant's/Registrant's Name, Address and Telephone Number Cheminova, Inc.; Oak Hill Park; 1700 Route 23; Wayne, NJ Telephone: (973) 305-6600, x238	Cheminova, Inc.; Oak Hill Park; 1700 Route 23; Wayne, NJ 07470							
Active ingredient(s) and/or representative test compound(s)  Isopropylamine salt of glyphosate, N-(phosphonomethyl) glycine  Date  October 18, 2000								
General Use Pattem(s) (list all those claimed for this product using 40 CFF Residential Domestic Outdoor	R Part 158)	Product Name Glyphosate Technical						
NOTE: If your product is a 100% repackaging of another purchased EPA-registered product labeled for all the same uses on your label, you do not need to submit this form. You must submit the Formulators Exemption Statement (EPA Form 8570-27).								
I am responding to a Data-Call-In Notice, and have included with purpose)	this form a list of companies	sent offers of compensation (the Data Matrix form should be used for this						
SECTION I: METHOD OF DATA SUPPORT (Check one method only)								
I am using the cite-all method of support, and have included with a list of companies sent offers of compensation (the Data Matrix f should be used for this purpose).	form X meth	using the selective method of support (or cite-all option under the selective od), and have included with this form a completed list of data requirements Data Matrix form must be used).						
SE	ECTION II: GENERAL OFFER T	O PAY						
[Required if using the cite-all method or when using the cite-all option under	er the selective method to sa	isfy one or more data requirements]						
I hereby offer and agree to pay compensation, to other persons,	with regard to the approval of	of this application, to the extent required by FIFRA.						
	SECTION III: CERTIFICATIO	N .						
registration, the form for reregistration, or the Data-Call-In response. In add	dition, if the cite-all option or ne properties or effects of this to be submitted under the da	product or an identical or substantially similar product, or one or more of the						
I certify that for each exclusive use study cited in support of this registration original data submitter to cite that study.	n or reregistration, that I am	the original data submitter or that I have obtained the written permission of the						
	upport of this application; (c) that submitted the study and	n exclusive use study, either: (a) I am the original data submitter: (b) I have all periods of eligibility for compensation have expired for the study; (d) the I have offered (I) to pay compensation to the extent required by sections erms of compensation, if any, to be paid for the use of the study.						
	omitted to the Agency upon re	to pay compensation and evidence of their delivery in accordance with equest. Should I fail to produce such evidence to the Agancy upon request, I at in conformity with FIFRA.						
I certify that the statements I have made on this form and all a statement may be punishable by fine or imprisonment or both under applic		urate, and complete. I acknowledge that any knowingly failse or misleading						
Signature	Date	Typed or Printed Name and Title						
Kide Stewens	October 18, 2000	Rick Stevens, Manager Regulatory Affairs .						

EPA Form 8570-34 (9-97) Electronic and Paper versions available. Submit only Paper version.





# UNITED STATES ENVIRONMENTAL PROTECTION AGENCY 401 M Street, S.W. WASHINGTON, D.C. 20460

Paperwork Reduction Act Notice: The public reporting burden for this collection of information is estimated to average 0.25 hours per response for registration activities and 0.25 hours per response for registration and special review activities, including time for reading the instructions and completing the necessary forms. Send comments regarding the burden estimate or any other aspect of this collection of information, including suggestions for reducing the burden to: Director, OPPE Information Management Division (2137), U.S. Environmental Protection Agency, 401 M Street, S.W., Washington, DC 20460. Do not send the form to this address.

		DATA MATRIX			
Date: October 18, 2000	)	EPA Reg. No./File Symbo	1: 4787-26	Page 1 of	
Applicant's/Registrant's Name & Address: Cheminova A/S, PO Box 9, Lemvig, Denmark; c/o Cheminova, Inc., Oak Hill Park, 1700 Route 23, Suite 300, Wayne, NJ 07470 Phone: (973) 305-6600, x238					
ngredient: Glyphosat	re e				
Guideline Reference Number	Guideline Study Name	MRID Number	Submitter	Status	Note
<u>158.190</u>	Product Chemistry				
(Series 61)	Product Identity and Composition	43632701	Cheminova	Own	
(Series 62)	Analysis and Certification of Product Ingredients	43728001	Cheminova	Own	
63-2	Color	43728002	Cheminova	Own	
63-3	Physical State	43728002	Cheminova	Own	
63-4	Odor	43728002	Cheminova	Own	
63-5	Melting Point	43728002	Cheminova*		
63-7	Density	43728002	Cheminova	Own	
63-8	Solubility	43728002	Cheminova*		
63-9	Vapor Pressure	43728002	Cheminova*		
		41096101	Monsanto	P**	
63-10	Dissociation Constant	43728002	Cheminova*		
63-11	Octanol/Water Partition Coefficient	43728002	Cheminova*		
63-12	Ha	43728002	Cheminova	Own	
63-13	Stability	43728002	Cheminova*		
	• • •	40559301	Monsanto	P	
63-15	Flammability	43728002	Cheminova	Own	
63-17					Footnote 1
63-20	Corrosion				Footnote 1
Section 158.340	: Toxicology	1			
81-1	Acute Oral Toxicity - Rat	43728003	Cheminova	Own	
81-2	Acute Dermal Toxicity	43738004	Cheminova	Own	
81-3	Acute Inhalation Toxicity - Rat	43632702 44078301	Cheminova	Own	11

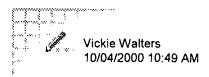
81-4	Primary Eye Irritation - Rabbit	43632703	Cheminova	l Own	-
	Timely Eye imader raden	44193401			
81-5	Primary Dermal Irritation	43632704	Cheminova	Own	
81-6	Dermal Sensitization	43728005	Cheminova	Own	
84-2A	Gene Mutation (Ames Test)	00078620	Monsanto	Р	
		00132683			
84-2B	Structural Chromosomal Aberration	00046364	Monsanto	Р	
		00132681 .			
		00132685			
84-4	Other Genotoxic Effects	00078619	Monsanto	Р	
		00132686			
		00132685			
<u>Section 158.490</u>	Ecological Effects				
71-1A	Avian Acute Oral - Quail	00108204	Monsanto	Р	
71-2A	Avian Dietary - Quail	00076492	Monsanto	P	_
71-2B	Avian Dietary - Duck	00108107	Monsanto	P	
71-3	Wild Mammal	00076492	Monsanto	P	
71-4A	Avian Reproduction – Quail	00108207	Monsanto	Р	
71-4B	Avian Reproduction – Duck	00036328	Monsanto	Р	<u> </u>
		00111953			
72-1A	Fish - Bluegill	GS-0178025	Public Literature		
72-1C	Fish – Rainbow Trout	00108112	Monsanto	Р	
		00108205			
72-2	Invertebrate	00108172	Monsanto	Р	
72-3B	Estuarine/Marine - Mollusk	00108110	Monsanto	P	
72-3C	Estuarine/Marine - Shrimp	00108111	Monsanto	Р	
72-4B	Life-cycle Invertebrate	00124763	Monsanto	Р	
72-5	Life-cycle Fish	00124763	Monsanto	Р	
Section 158.590	Beneficial Insect				
141-1	Honey Bee – Acute Contact	00026489	Monsanto	Р	
Section 158.290	Environmental Fate				
161-1	Hydrolysis	00108192	Monsanto	Р	
162-1	Aerobic Soil Metabolism	42372501	Monsanto	Р	
	Soil Dissipation	42765001	Monsanto	Р	



Cheminova, Inc. Glyphosate Technical Page 2 of 3

Section 158.440	Spray Drift		
201-1	Droplet Size Spectrum		Spray Drift Task Force Data (member)
201-2	Drift Field Evaluation		Spray Drift Task Force Data (member)
Authorization Letter.  **P = Permission granted file with EPA.  Footnote 1: To be initiated	With reference to Monsanto data and from Monsanto via Letter of Authorization on the container necessitated a lity and corrosion characteristics studies.		
Signature	Jeuns	Name and Title Rick Stevens, Manager Regulatory Affairs	Date October 18, 2000

			•	
·	::	•	•	•



4787-26

To:

RRS@cheminova.com

cc: Jim

Jim Tompkins/DC/USEPA/US@EPA

Subject: Recent Submissions

HI Rick:

The four submissions that came in on 9/15/2000 appear to be ok . For the rest of them you might want to update the registration numbers of products yours are similar to. The 239 registration numbers have been changed to other numbers.

I do have some problems with three of your other submissions.

No offer to pay and data matrix were submitted with the applications to add residential uses to 4787-26 and 4787-35. These must be submitted. If you are sure you have referenced all applicable guideline studies previously, you may reference a previous data matrix until it is updated.

For 67760-UL--Glyfos submitted 8/23/2000, since it appears that 4787 and 67760 are two registrations numbers belonging to one company Cheminova and you are formulating with 4787-35, according to the CSF submitted, taking the formulator's exemption is not acceptable, since you are using your own technical. To complete this registration an offer to pay taking cite all or selective must be submitted. A data matrix must all be submitted if applicable.

Further action on the above three submissions will await submission of required offers to pay and data matrixes.

Vickie Walters PM-25

#### Jim Tompkins

10/03/2000 09:42 AM



To:

Vickie Walters/DC/USEPA/US@EPA

CC:

Subject: Glyfos Product Registrations

--------- Forwarded by Jim Tompkins/DC/USEPA/US on 10/03/2000 09:42 AM ---------

RF

RRS@cheminova.com on 10/03/2000 08:31:47 AM

To:

Jim Tompkins/DC/USEPA/US

CC:

Subject: Glyfos Product Registrations

Hi Jim,

On September 15 I hand delivered to EPA four Me-Too product registration packages with varying percentages of glyphosate for use on home lawn and garden areas. I am about to submit five more packages formatted as the previous four. Have you seen those packages yet and, if so, is there anything wrong with the packages that I might need to correct in the next five I am about to submit?

Thanks Jim, Rick Stevens Cheminova LEWIS & HARRISON 122 C Street, N.W., Suite 740 Washington, O.C. 20001 telephone 202.393,3903

fax 202,393,3906

Consultants in Government Affairs

July 21, 2000

VIA FACSIMILE: 703-308-5320

Office of Pesticide Programs
Registration Division
Herbicide Branch
US Environmental Protection Agency
Crystal Mall II, Third Floor
1921 Jefferson Davis Highway
Arlington, VA 22202

ATTENTION:

Mr. Jim Tompkins

SUBJECT:

Glyphosate Technical (EPA Reg. No. 4787-26) Glyphosate Concentrate (EPA Reg. No. 4787-35)

Request for Certificates of Registration

Dear Mr. Tompkins:

As agent for Cheminova Agro A/S, we are requesting original Certificates of Registration for the following two (2) products:

- Glyphosate Technical (EPA Reg. No. 4787-26)
- Glyphosate Concentrate (EPA Reg. No. 4787-35)

Attached, please find a copy of a letter authorizing Lewis & Harrison to act on the behalf of Cheminova Agro A/S.

Please note that we are requesting original Certificates, copies are not sufficient for our purposes. We would greatly appreciate anything you can do to expedite the process for our obtaining these certificates.

Please contact me at 202-393-3903 when the certificates are ready so that we can arrange for a messenger to retrieve the documents.

Thank you very much for your cooperation in this manner.

Sincerely,

Christina M. Surck

Christina M. Swick Agent for, Cheminova Agro A/S Picked Up by Corrier

7-21-200 2:51PM

FROM LEWIS - HARRISON, LLC 202 393 3906

P. 2





US EPA 401 M St. SW 3 Washington, DC 20460

To Whom it May Concern

Please be hereby notified that Lewis and Harrison LLC is authorized until further notice to act on behalf of Cheminova Agro A/S in any matter regarding regulation or registration of pesticide products by US EPA.

Sincerely,

Don O'Shaughnessy, Ph.D., DABT

Director, Regulatory Affairs

My Commission expirer 3/24/2004



U.S. ENVIRONMENTAL PROTECTION AGENCY Office of Pesticide Programs Registration Division (7505C) 401 "M" St., S.W. Washington, D.C. 20460

4787-26

EPA Reg.

Number:

Date of Issuance:

JUL 22 1998

Term of Issuance:

Conditional

Name of Pesticide Product:

Glyphosate Technical

NOTICE OF PESTICIDE: <u>X</u> Registration Reregistration

(under FIFRA, as amended)

Name and Address of Registrant (include ZIP Code):

Cheminova, Inc. Oak Hill Park 1700 Route 23, Suite 210 Wayne, NJ 074070

Note: Changes in labeling differing in substance from that accepted in connection with this registration must be submitted to and accepted by the Registration Division prior to use of the label in commerce. In any correspondence on this product always refer to the above EPA registration number.

On the basis of information furnished by the registrant, the above named pesticide is hereby registered/reregistered under the Federal Insecticide, Fungicide and Rodenticide Act.

Registration is in no way to be construed as an endorsement or recommendation of this product by the Agency. In order to protect health and the environment, the Administrator, on his motion, may at any time suspend or cancel the registration of a pesticide in accordance with the Act. The acceptance of any name in connection with the registration of a product under this Act is not to be construed as giving the registrant a right to exclusive use of the name or to its use if it has been covered by others.

This product is conditionally registered in accordance with FIFRA sec. 3(c)(7)(A) provided that you:

- Submit and/or cite all data required for registration of your product under FIFRA sec. 3(c)(5) when the Agency requires all registrants of similar products to submit such data; and submit acceptable responses required for reregistration of your product under FIFRA section 4.
- 2. Add the phrase "EPA Registration No. 4787-26" to your label before you release the product for shipment.
- 3. Submit three(3) copies of your final printed labeling before you release the product for shipment.

If these conditions are not complied with, the registration will be subject to cancellation in accordance with FIFRA sec.6(e). Your release for shipment of the product constitutes acceptance of these conditions.

A stamped copy of the label is enclosed for your records.

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7-22-98

# PRECAUTIONARY STATEMENTS HAZARDS TO HUMANS AND DOMESTIC ANIMALS KEEP OUT OF REACH OF CHILDREN

#### DANGER

Corrosive, Causes irreversible eye damage, Harmful if absorbed through skin. Do not get in eyes or on clothing. Avoid contact with skin. Wear goggles or face shield. Wash thoroughly with soap and water after handling. Remove contaminated clothing and wash clothing before reuse.

#### **ENVIRONMENTAL HAZARDS**

Do not contaminate water when cleaning equipment or disposing of wastes.

The active ingredient in this product is a non-selective broad spectrum herbicide. Do not handle or use in a manner that can result in accidental contact with desirable vegetation.

#### **DIRECTIONS FOR USE**

It is a violation of Federal Law to use this product in a manner inconsistent with its labeling.

For use by commercial pesticide formulators.

For formulation into end-use herbicide product intended for use on:

(1) Fallow ground, pastures and sods, noncrop areas including: rights of way, industrial, recreational and public areas, forestry site preparation and release programs, site preparation or directed sprays to the floor of ornamental nurseries and Christmas tree farms, rights of way (ROW), Conservation Reserve Program (CRP), turfgrasses and grasses for seed production.

#### **GLYPHOSATE TECHNICAL**

For Manufacturing Use Only

#### **Net Contents:**

#### KEEP OUT OF REACH OF CHILDREN

#### DANGER

IN CASE OF AN EMERGENCY ENDANGERING LIFE OR PROPERTY INVOLVING THIS PRODUCT, CALL TOLL FREE, DAY OR NIGHT, 1-800-228-5635, Ext. # 153

#### Statement of Practical Treatment (First Aid)

If swallowed: Call a physician or Poison Control Center. Do not induce vomiting. Drink promptly a large quantity of water, egg whites, gelatin solution, or if these are not available, drink large quantities of water. Avoid alcohol.

If on Skin: Wash with plenty of soap and water. Get medical attention.

If in Eyes: Hold eyelids open and flush with steady, gentle stream of water for 15 minutes.

Get medical attention.

Note to Physician: Probable mucosal damage may contraindicate the use of gastric lavage.

See Side Panel for Additional Precautionary Statements

EPA Reg. No.: 4787-(26) EPA Est. No. 4787-DN-1

Manufactured by CHEMINOVA AGRO A/S P.O. BOX 9 DK-7620 LEMVIG DENMARK Row Crops: corn, cotton, peanuts, sorghum, soybeans, sugarcane, barley, buckwheat, millet, oats, rice, rye, triticale, wheat, wild rice.

Citrus: alamondin, chironja, citron, grapefruit, kumquat, lemon, lime, mandarin orange, orange, pummelo, tangelo, tangerine, tangors.

Tree nuts: almond, beechnut, Brazil nut, butternut, cashew, chestnut, chinquapin, filbert (hazelnut), hickory nut, macadamia nut, pecan, pistachio, walnut.

<u>Vine cross:</u> grapes and kiwi fruit. <u>Tree fruits:</u> apple, apricots, cherry, loquat, mayhaw, nectarine, olive, peach, pear,

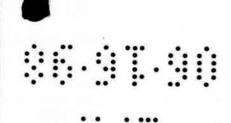
plum/prune, quince.

Vegetables: artichoke (Jerusalem), asparagus, beans (all), beet greens, beets (red, sugar), broccoli (all), Brussels sprouts, cabbage (all), cabbage (Chinese), cantaloupe, carrot, cauliflower, casaba melon, celery, chard (Swiss), chicory, collards, crenshaw melon, cucumber, eggplant, endive, garlic, gourds, ground cherry, honeydew melon, honey ball melon, horseradish, kale, kohlrabi, leek, lentils, lettuce, mango melon, melons, muskmelon, mustard greens, okra, onion, rape greens, parsley, parsnips, peas (all), pepper (all), Persian melon, potato (Irish and sweet), pumpkin, radish, rhubarb, rutabaga, spinach, squash, tomatillo, tomato, tumip, watercress, watermelon, yams.

<u>Small Fruits and Berries:</u> blackberry, blueberry, boysenberry, cranberry, currant, dewberry, elderberry, gooseberry, huckleberry, loganberry, olallieberry, raspberry.

<u>Forage Crops:</u> alfalfa, forage grasses, forage legumes.

Tropical Crops: acerola, atemoya, avocado, banana (plantains), breadfruit, canistel, carambola, cherimoya, cocoa beans, coffee, dates, figs, genip, guava, jaboticaba, jackfruit, longan, lychee, mango, papaya, passion fruit, persimmons, pineapple, pomegranate, sapodilla, sapote (black, mamey, white) soursop, sugar apple, tamarind and tea.



- (2) Uses for which USEPA has accepted the required data and/or citations of data that the formulator has submitted in support of registration; and
- (3) Uses for experimental purposes that are in compliance with USEPA requirements.

#### STORAGE AND DISPOSAL

Do not contaminate water, food, or feed by storage and disposal.

Storage: Store in original container only. Do not store near heat or open flame. In case of spill or leak, sweep up and dispose of waste.

Pesticide Disposal: Open dumping is prohibited. Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

Container Disposal: Triple rinse (or equivalent). Then offer for recycling, or dispose of in a sanitary landfill, or by other procedures approved by state and local authorities.

#### WARRANTY LIMITATIONS AND DISCLAIMER

CHEMINOVA warrants that the material contained herein conforms to the chemical description on the label, that it will pass without objection in the trade under the contract description, and that such product will be delivered free from any lawful security interest, lien, or encumbrance. CHEMINOVA MAKES NO OTHER EXPRESS WARRANTIES OF ANY KIND AND DISCLAIMS ANY AND ALL IMPLIED WARRANTIES. INCLUDING BUT NOT LIMITED TO WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. NO ORAL OR WRITTEN INFORMATION OR ADVICE GIVEN BY CHEMINOVA, ITS DISTRIBUTORS, AGENTS, OR EMPLOYEES SHALL CREATE WARRANTY OR IN ANY WAY INCREASE THE SCOPE OF THIS

WARRANTY, AND THE BUYER MAY NOT RELY ON SUCH ON INFORMATION OR ADVICE.



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EPA Perm 4570-13 (3-75)



Cheminova, Inc. Oak Hill Park 1700 Route 23, Suite 210 Wayne, New Jersey 07470 Phone: 973-305-6600 Fax: 973-305-1382 Customer service: 1-800-548-6113

June 11, 1998

Mr. Jim Tompkins (PM 25) Herbicide Branch, Registration Division (5704C) US EPA 401 M St. SW Washington DC 20460

Dear Mr. Tompkins,
RE: Glyphosate Technical labeling, File Symbol 4787-EA
In response to your letter of June 19, 1998 to Mr. K. Lystbæk Of our Headquarters in Denmark,
Cheminova Agro has provided the enclosed revised draft labeling for the subject product.

Please advise if there are further requirements.

Sincerely,

Don O'Shaughnessy, Ph.D., DABT, DABFM Director, Regulatory Affairs

JUN 16 1997

Ms. Kristian Lystback Cheminova, Inc 1700 Rt 23, Suite 210 Wayne, NJ 07470

Dear Ms. Lystback:

Subject: Glyphosate Technical (Eye Irritation and Acute Inhalation)
EPA Registration No. 4787-EA
Your Submissions Dated July 9 and November 26, 1996

The scientific review and evaluation of the study and waiver request submitted above have been completed. The following are our conclusions and/or comments.

- 1. The waiver request is acceptable since significant inhalation exposure is not expected to this non-volatile, manufacturing solid. The acute inhalation study included to support the wavier was not deemed relevant.
- The Eye Irritation Category is I.
- 3. Please submit five (5) copies of labeling bearing the following changes.
  - a. The Signal Word must be "Danger".
  - b. The precautionary statements must read as follows:

Corrosive, Causes irreversible eye damage, Harmful if absorbed through skin. Do not get in eyes or on clothing. Avoid contact with skin. Wear goggles or face shield. Wash thoroughly with soap and water after handling. Remove contaminated clothing and wash clothing before reuse".

c. The first aid statements are as follows:

IF IN EYES: Hold eyelids open and flush with steady, gentle stream if water for 15 minutes. Get medical attention.

IF SWALLOWED: Call a physician or Poison Control Center. Do not induce vomiting. Drink promptly a large quantity of water, egg whites, gelatin solution, or if these are not available, drink large quantities of water. Avoid alcohol.

IF ON SKIN: Wash with plenty of soap and water. Get medical attention.

Note to Physician: Probable mucosal damage may contraindicate the use of gastric lavage.

Sincerely,

Product Manager 25

Herbicide Branch

Registration Division



#### UNITED STATES ENVIRONMENTAL PROTECTION AGENCY WASHINGTON, D.C. 20460

MAR 5 1997

OFFICE OF PREVENTION, PESTICIDES AND TOXIC SUBSTANCES

#### MEMORANDUM

Subject: Primary Eye Irritation and Acute Inhalation Waiver

Review for EPA File Symbol 4787-EA (D233504)

From:

Mark J. Perry, Biologist

Precautionary Review Section Registration Support Branch Registration Division (7505W)

To:

R. Taylor, PM-25 / V. Walters

Registration Division (7505C)

Applicant: Cheminova, Inc

1700 Route 23, Suite 210

Wayne, NJ 07470

#### FORMULATION FROM LABEL:

Active Ingredient(s): Glyphosate	% by wt. 96.0
<pre>Inert Ingredient(s):</pre>	4.0

Total:

100%

#### BACKGROUND

Cheminova submitted a primary eye irritation study and an acute inhalation waiver request to support registration of Glyphosate Technical, EPA File Symbol 4787-EA. An acute inhalation study on another glyphosate product was also submitted to support the waiver request. Glyphosate Technical is intended for manufacturing use only and contains 96.0% active ingredient. The eye irritation study was performed by Stillmeadow and assigned MRID number 441934-01. The remaining acute data requirements were addressed in the 3/26/96 PRS review of this product.



#### RECOMMENDATION

#### 1. Acute Inhalation; Waiver Accepted

The waiver is acceptable since significant inhalation exposure is not expected to this non-volatile, manufacturing use solid. Further, the acute inhalation study (MRID 440783) included to support the waiver request was not deemed relevant, therefore it was not reviewed.

2. Eye Irritation; Category I / Self Validated

#### LABELING

- 1. The recommended signal word is "Danger."
- 2. The recommended precautionary statements are a follows:

Corrosive. Causes irreversible eye damage. Harmful if absorbed through skin. Do not get in eyes or on clothing. Avoid contact with skin. Wear goggles or face shield. Wash thoroughly with soap and water after handling. Remove contaminated clothing and wash clothing before reuse.

3. The recommended first aid statements are as follows:

IF IN EYES: Hold eyelids open and flush with steady, gentle stream of water for 15 minutes. Get medical attention.

IF SWALLOWED: Call a physician or Poison Control Center. Do not induce vomiting. Drink promptly a large quantity of milk, egg whites, gelatin solution, or if these are not available, drink large quantities of water. Avoid alcohol.

IF ON SKIN: Wash with plenty of soap and water. Get medical attention.

Note To Physician: Probable mucosal damage may contraindicate the use of gastric lavage.

#### ACUTE TOX ONE-LINER

1. PC CODE: 417300

2. CURRENT DATE: 3/26/96

3. TEST MATERIAL: Glyphosate Technical

Study/Species/Lab/ Study#/Date	MRID No.	Results	Tox.	Core Grade
81-4, Rabbit, Still- meadow, Inc., 2981- 96, 9/12/96	441934-01	Opacity in 2 animals at 21 days	I	v

#### Core Grade Key:

A = Acceptable

S = Supplementary

U = Unacceptable

#### PRECAUTIONARY STATEMENTS

#### HAZARDS TO HUMANS AND DOMESTIC ANIMALS

Causes substantial but temporary eye injury. Harmful if swallowed or inhaled. Avoid breathing dust. Avoid contact with skin, eyes or clothing. Do not contaminate food or feed products.

Do not use or handle this product in such a manner as to directly or through drift expose workers or other persons.

#### **ENVIRONMENTAL HAZARDS**

Do not contaminate water when cleaning equipment or disposing of wastes.

The active ingredient in this product is a non-selective broad spectrum herbicide. Do not handle or use in a manner that can result in accidental contact with desirable vegetation.

#### **DIRECTIONS FOR USE**

It is a violation of Federal Law to use this product in a manner inconsistent with its labeling.

For use by commercial pesticide formulators.

For formulation into end-use herbicide product intended for use on: fallow ground, pastures and sods, noncrop areas including: rights of way, industrial, recreational and public areas, forestry site preparation and release programs, site preparation or directed sprays to the floor of ornamental nurseries and christmas tree farms, rights of way (ROW), Conservation Reserve Program (CRP), turfgrasses and grasses for seed production.





#### **GLYPHOSATE TECHNICAL**

For Manufacturing Use Only

\*Active Ingredient: GLYPHOSATE\*\* 96%
\*Inert Ingredients: 4%
\*TOTAL 100%

Net Contents

- \* Dry basis
- \*\* Glycine, N-(phosphonomethyl)-

#### WARNING

Keep Out of Reach of Children

Statement of Practical Treatment

If swallowed: Drink 1 to 2 glasses of water or milk. Call a physician and get medical treatment. Never give anything by mouth to an unconscious person.

If Inhaled: Remove individual to fresh air. If not breathing give artificial respiration, preferably mouth-to-mouth.

If on Skin: Wash immediately with soap and water.

If in Eyes: Immediately hold eyelids open and flush with plenty of water for at least 15 minutes. Get medical attention.

See Side Panel for Additional Precautionary Statements

> Manufactured by CHEMINOVA AGRO A/S P.O. BOX 9 DK-7620 LEMVIG

Red Danjer " a appropriate Carpage

Row Crops: corn, cotton, peanuts, sorghum, soybeans, sugarcane, barley, buckwheat, millet, oats, rice, rye, triticale, wheat, wild rice.

Citrus: alamondin, chironja, citron, grapefruit, kumquat, lemon, lime, mandarin orange, orange, pummelo, tangelo, tangerine, tangors.

Tree nuts: almond, beechnut, Brazil nut, butternut, cashew, chestnut, chinquapin, filbert (hazelnut), hickory nut, macadamia nut, pecan, pistachio, walnut.

<u>Vine crops</u>: grapes and kiwi fruit. Tree Fruits: apple, apricots, cherry, loquat, mayhaw, nectarine, olive, peach, pear, plum/prune, quince.

Vegetables: artichoke(jerusalem), asparagus, beans (all), beet greens, beets (red, sugar), broccoli (all), Brussels sprouts, cabbage (all), cabbage (chinese), cantaloupe, carrot, cauliflower, casaba melon, celery, chard (swiss), chicory, collards, crenshaw melon. cucumber, eggplant, endive, garlic, gourds, ground cherry, honeydew melon, honey ball melon, horseradish, kale, kohlrabi, leek, lentils, lettuce, mango melon, melons, muskmelon, mustard greens, okra, onion, rape greens, parsley, parsnips, peas (all), pepper (all), persian melon, potato (irish and sweet), pumpkin, radish, rhubarb, rutabaga, spinach, squash, tomatillo, tomato, tumip, watercress, watermelon, yams.

Small Fruits and Berries: blackberry, blueberry, boysenberry, cranberry, currant, dewberry, elderberry, gooseberry, huckleberry, loganberry, olalliberry, raspberry.

Forage Crops: alfalfa, forage grasses, forage

Forage Crops: alfalfa, forage grasses, forage legumes.

<u>Tropical Crops</u>: acerola, atemoya, avocado, banana (plantains), breadfruit, canistel, carambola, cherimoya, cocoa beans, coffee, dates, figs, genip, guava, jaboticaba, jackfruit, longan, lychee, mango, papaya, passion fruit, persimmons, pineapple, pomegranate,





sapodilla, sapote (black, mamey, white) soursop, sugar apple, tamarind and tea.

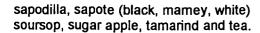
#### STORAGE AND DISPOSAL

**Storage:** Store in original container only. Do not store near heat or open flame. In case of spill or leak, sweep up and dispose of waste.

Do not contaminate water, food, or feed by storage and disposal. Open dumping is prohibited. Waste resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

Pesticide Disposal: Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

Container Disposal: Triple rinse (or equivalent). Then offer for recycling, or dispose of in a sanitary landfill, or by other procedures approved by state and local authorities.



#### STORAGE AND DISPOSAL

**Storage:** Store in original container only. Do not store near heat or open flame. In case of spill or leak, sweep up and dispose of waste.

Do not contaminate water, food, or feed by storage and disposal. Open dumping is prohibited. Waste resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

Pesticide Disposal: Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

Container Disposal: Triple rinse (or equivalent). Then offer for recycling, or dispose of in a sanitary landfill, or by other procedures approved by state and local authorities.



MAR - 4 1997

Ms. Leanne Pruett Cheminova Agro, A/S c/o Cheminova, Inc 1700 Rte 23, Suite 210 Wayne, N 07470

Dear Ms. Pruett:

Subject: Clyphosate Technical (Eye Irritation and Acute Inhalation Studies) EPA Registration No. 4787-EA Your Letters dated July 9 and November 25, 1996

This acknowledges receipt of your letters dated July 9 and November 25, 1996 transmitting an eye irritation and an acute inhalation study to support registration of this product. These studies have been routed to the proper discipline for review. Further action will await completion of scientific review and evaluation.

The MRIDs assigned the data are as follows:

Acute Inhalation Study Primary Eye Irritation Study 44078301 44193401

Sincerely,

Philip V. Errico Product Manager 25 Fungicide-Herbicide Branch Registration Division (7505C)

CONCURRENCES								
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Cheminova Agro A/S P. O. Box 9 DK-7620 Lemvig Denmark Phone (+45) 97 83 41 00 Fax (+45) 97 83 45 55 Telex 66514 CHEMV DK A/S reg. no. 177.122

Mr. Robert J. Taylor Product Manager 25 Fungicide-Herbicide Branch Registration Division (7505C) 401 M St., SW Washington, DC 20460 U. S. A. November 25, 1996

Kly/lon

441934-00

GLYPHOSATE TECHNICAL EPA FILE SYMBOL 4787-EA Our Letter Dated July 9, 1996

Dear Mr. Taylor,

Further to our letter of July 9, 1996 we hereby submit a repeat eye irritation study in response to your deficiency letter of April 2, 1996.

Since Glyphosate Technical is an acid with a pH of 1.97 the product would be expected to cause eye irritating effects.

The study showed that Glyphosate Technical should be assigned to Toxicity Category I for nonwashed eyes and Toxicity Category II for washed eyes.

Yours faithfully,

CHEMINOVA AGRO A/S

Kristian Lystbæk

Senior Registration Specialist



Cheminova Agro A/S P. O. Box 9 DK-7620 Lemvig Denmark Phone (+45) 97 83 41 00 Fax (+45) 97 83 45 55 Telex 66514 CHEMV DK A/S reg. no. 177.122

Submission/Glyphosate Technical/440

#### TRANSMITTAL DOCUMENT - GLYPHOSATE TECHNICAL

Submitter:

Cheminova Agro A/S

P.O. Box 9

DK-7620 Lemvig

DENMARK

Regulatory Action:

Registration request for Glyposate Technical

EPA File Symbol 4787-EA Guideline Number 81-4

Transmittal Date:

November 25, 1996

Study Submitted:

CHA 440: Primary Eye Irritation Study in Rabbits

(Stillmeadow, Inc., Study No. 2981-96).

44193401

Company Official:

Kristian Lystbæk

Name

Signature

Company Name:

Cheminova Agro A/S

P.O. Box 9

DK-7620 Lemvig

DENMARK

Company Contact:

Authorized Representative,

Leanne Pruett Cheminova, Inc.

Phone: 201-305-6600

## U.S. ENVIRONMENTAL PROTECTION AGENCY Office of Pesticide Programs

CHEMINOVA AGRO A/S 1700 ROUTE 23 SUITE 210 WAYNE, NJ 07470

Report of Analysis for Compliance with PR Notice 86-5

Thank you for your transmittal of 01/13/97. Our staff has completed a preliminary analysis of the material. The results are provided as follows:

Your submittal was found to be in full compliance with the standards for submission of data contained in PR Notice 86-5. A copy of your bibliography is enclosed, annotated with Master Record ID's (MRIDs) assigned to each document submitted. Please use these numbers in all future references to these documents. Thank you for your cooperation. If you have any questions concerning this data submission, please raise them with the cognizant Product Manager, to whom the data have been released.



Cheminova Agro A/S P. O. Box 9 DK-7620 Lemvig Denmark

Phone (+45) 97 83 41 00 Fax (+45) 97 83 45 55 Telex 66514 CHEMV DK A/S reg. no. 177.122

Mr. Robert J. Taylor Product Manager 25 Fungicide-Herbicide Branch Registration Division (7505C) 401 M St., SW Washington, DC 20460 U. S. A.

July 9, 1996

KLy/lon

440783-()()

GLYPHOSATE TECHNICAL EPA FILE SYMBOL 4787-EA Your Letter Dated April 2, 1996

Dear Mr. Taylor,

We are hereby responding to the deficiencies with two acute studies as specified in your letter of April 2, 1996.

#### ACUTE INHALATION

Deficiency:

Study should be performed with MMAD of approximately 4.0 microns or less. The study was conducted with a MMAD of 22.5 microns.

Response:

At the time the study was conducted (1989), it was recommended to use technical grade materials and formulations as supplied. The technical material was therefore tested as supplied.

To satisfy the acute inhalation requirement we are submitting with this letter an acute inha-. lation study conducted with a 62% aqueous solution of EPA salt of Glyphosate.

In consideration of the Glyphosate RED we are,, confident that the submitted study will satisfy; the requirement.

1/2

C.C.: Cheminova, Inc., Leanne Pruett

circ.: NKS, JCM, MVF

GLY-USA; GLY-USA-440-960207 arkiv.

Cheminova Agro A/S P. O. Box 9 DK-7620 Lemvig Denmark Phone (+45) 97 83 41 00 Fax (+45) 97 83 45 55 Telex 66514 CHEMV DK A/S reg. no. 177.122

The RED specifies that an acute inhalation study on technical Glyphosate is not required since it is non volatile, solid and adequate inhalation studies that were conducted on the end-use product formulations. We can in this connection also inform you that we have applied for registration of a 360 g/l SL formulation (Glyfos-EPA file No. 4787-EG). An acute inhalation study has been accepted for this product (MRID 43530004).

For the reasons given above we respectfully request a waiver for an acute inhalation study on Glyphosate technical.

#### EYE IRRITATION

Deficiency: The study was terminated at 96 hours.

Response: We are conducting a repeat study. We expect to

submit the study report by October/November

1996.

Yours sincerely,

CHEMINOVA AGRO A/S

Kristian Lystbæk

Senior Registration Specialist

Phone (+45) 97 83 41 00 Fax (+45) 97 83 45 55 Telex 66514 CHEMV DK A/S reg. no. 177.122

# TRANSMITTAL DOCUMENT

Submitter:

Cheminova Agro A/S

P.O. Box 9

DK-7620 Lemvig, Denmark

**Regulatory Action:** 

Registration request for Glyphosate Technical

EPA File Symbol 4787-EA Guideline Number 81-3

**Transmittal Date:** 

July 11, 1996.

Study Submitted:

Glyphosate Premix - Acute inhalation toxicity study -

four-hour exposure (nose only) in the rat.

(Safepharm Laboratories. Project No. 545/39). 4407830

**Company Official:** 

Kristian Lystbæk

Name

Signature

**Company Name:** 

Cheminova Agro A/S

P.O. Box 9

DK-7620 Lemvig, Denmark

**Company Contact:** 

Authorized Representative;

Leanne Pruett

Cheminova, Inc.

Phone: 201-305-6600

# U.S. ENVIRONMENTAL PROTECTION AGENCY Office of Pesticide Programs

CHEMINOVA AGRO A/S 1700 ROUTE 23 SUITE 210 WAYNE, NJ 07470

Report of Analysis for Compliance with PR Notice 86-5

Thank you for your transmittal of 08/07/96. Our staff has completed a preliminary analysis of the material. The results are provided as follows:

Your submittal was found to be in full compliance with the standards for submission of data contained in PR Notice 86-5. A copy of your bibliography is enclosed, annotated with Master Record ID's (MRIDs) assigned to each document submitted. Please use these numbers in all future references to these documents. Thank you for your cooperation. If you have any questions concerning this data submission, please raise them with the cognizant Product Manager, to whom the data have been released.



Phone (+45) 97 83 41 00 Fax (+45) 97 83 4555 Telex 66514 CHEMV DK A/S reg. no. 177.122

Mr. Robert J. Taylor Product Manager 25 Fungicide-Herbicide Branch Registration Division (7505C) 401 M St., SW Washington, DC 20460 U. S. A. November 25, 1996

Kly/lon

441934-00

GLYPHOSATE TECHNICAL EPA FILE SYMBOL 4787-EA Our Letter Dated July 9, 1996

Dear Mr. Taylor,

2

Further to our letter of July 9, 1996 we hereby submit a repeat eye irritation study in response to your deficiency letter of April 2, 1996.

Since Glyphosate Technical is an acid with a pH of 1.97 the product would be expected to cause eye irritating effects.

The study showed that Glyphosate Technical should be assigned to Toxicity Category I for nonwashed eyes and Toxicity Category II for washed eyes.

Yours faithfully,

CHEMINOVA AGRO A/S

Kristian Lystbæk

Senior Registration Specialist



Phone (+45) 97 83 41 00 Fax (+45) 97 83 45 55 Telex 66514 CHEMV DK A/S reg. no. 177.122

Submission/Glyphosate Technical/440

#### TRANSMITTAL DOCUMENT - GLYPHOSATE TECHNICAL

Submitter:

Cheminova Agro A/S

P.O. Box 9

DK-7620 Lemvig

DENMARK

Regulatory Action:

Registration request for Glyposate Technical

EPA File Symbol 4787-EA

Guideline Number 81-4

Transmittal Date:

November 25, 1996

Study Submitted:

CHA 440: Primary Eye Irritation Study in Rabbits

(Stillmeadow, Inc., Study No. 2981-96).

44193401

Company Official:

Kristian Lystbæk

Name

Signature

Company Name:

Cheminova Agro A/S

P.O. Box 9

DK-7620 Lemvig

DENMARK

Company Contact:

Authorized Representative,

Leanne Pruett Cheminova, Inc.

Phone: 201-305-6600



Phone (+45) 97834100 Fax (+45) 97834555 Telex 66514 CHEMV DK A/S reg. no. 177.122

Mr. Robert J. Taylor Product Manager 25 Fungicide-Herbicide Branch Registration Division (7505C) 401 M St., SW Washington, DC 20460 U. S. A.

July 9, 1996

KLy/lon

440783-00

GLYPHOSATE TECHNICAL EPA FILE SYMBOL 4787-EA Your Letter Dated April 2, 1996

Dear Mr. Taylor,

We are hereby responding to the deficiencies with two acute studies as specified in your letter of April 2, 1996.

#### ACUTE INHALATION

Deficiency:

Study should be performed with MMAD of approximately 4.0 microns or less. The study was conducted with a MMAD of 22.5 microns.

Response:

At the time the study was conducted (1989), it was recommended to use technical grade materials and formulations as supplied. The technical material was therefore tested as supplied.

To satisfy the acute inhalation requirement we are submitting with this letter an acute inhalation study conducted with a 62% aqueous solution of EPA salt of Glyphosate.

In consideration of the Glyphosate RED we are confident that the submitted study will satisfy the requirement.

1/2:

c.c.:

Cheminova, Inc., Leanne Pruett

circ.: NKS, JCM, MVF

arkiv:

GLY-USA; GLY-USA-440-960207

Phone (+45) 978341093 Fax (+45) 978345935 Telex 66514 CHEMN DK A/S reg. no. 177.122

The RED specifies that an acute inhalation study on technical Glyphosate is not required since it is non volatile, solid and adequate inhalation studies that were conducted on the end-use product formulations. We can in this connection also inform you that we have applied for registration of a 360 g/l SL formulation (Glyfos-EPA file No. 4787-EG). An acute inhalation study has been accepted for this product (MRID 43530004).

For the reasons given above we respectfully request a waiver for an acute inhalation study on Glyphosate technical.

#### EYE IRRITATION

Deficiency: The study was terminated at 96 hours.

Response: We are conducting a repeat study. We expect to submit the study report by October/November

1996.

Yours sincerely,

CHEMINOVA AGRO A/S

Kristian Lystbæk

Senior Registration Specialist

Phone (+45) 97 83 41 00 Fax (+45) 97 83 45 55 Telex 66514 CHEMV DK A/S reg. no. 177.122

# TRANSMITTAL DOCUMENT

Submitter:

Cheminova Agro A/S

P.O. Box 9

DK-7620 Lemvig, Denmark

Regulatory Action:

Registration request for Glyphosate Technical

EPA File Symbol 4787-EA Guideline Number 81-3

**Transmittal Date:** 

July 11, 1996.

**Study Submitted:** 

Glyphosate Premix - Acute inhalation toxicity study -

four-hour exposure (nose only) in the rat.

(Safepharm Laboratories. Project No. 545/39). 44078

**Company Official:** 

Kristian Lystbæk

Name

Signature

**Company Name:** 

Cheminova Agro A/S

P.O. Box 9

DK-7620 Lemvig, Denmark

**Company Contact:** 

Authorized Representative;

Leanne Pruett

Cheminova, Inc.

Phone: 201-305-6600

APR -2 1996

Ms. Leanne Pruett Cheminova Agro A/S c/o Cheminova, Inc. 1700 Rte. 23, Suite 210 Wayne, NJ 07470

Dear Ms. Pruett:

Subject: Glyphosate Technical EPA File Symbol 4787-EA Your Letter Dated July 7, 1995

The scientific review and evaluation of the registration request submitted above have been completed. This product is not acceptable for registration at this time, due to deficiencies with two (2) acute studies. The following are our conclusions and/or comments.

# I. Product Chemistry

A. The information submitted satisfies the requirements of 40 CFR 158.155 - 158.190 (Series 61, 62, 63) for the product Glyphosate Technical.

B. The product Glyphosate Technical is similar to Monsantos Glyphosate Technical with respect to the active ingredient content.

#### II. Acute Toxicology

A. The acute oral toxicity study is acceptable with an LD50 greater than 5.0 g/kg. The Toxicity Category for this study is IV.

B. The acute dermal toxicity study is acceptable with and LD50 greater than 2.0 g/kg. The Toxicity Category for this study is III. For future reference the Agency recommends the use of a semi permeable material, such as perforated plastic, over the gauze patch to reduce evaporation of the moistened material.

C. The acute inhalation study is not acceptable due to the reported MMAD of 22.5 microns. The Agency recommends that the acute inhalation studies be performed with MMADs of approximately 4.0 microns or less. You may choose to mechanically reduce the particle size of the test material and perform a new study. If small particles cannot be obtained, a waiver request may be appropriate.

- D. The eye irritation study is not acceptable because the study was terminated at 96 hours. An eye irritation category cannot be determined. This study must be repeated.
- E. The dermal irritation study is acceptable. No irritation was reported at any evaluation period. The Toxicity Category for this study is IV.
- F. The skin sensitization study is acceptable. This product is not a sensitizer.
- G. Precautionary Labeling recommendations will be provided following receipt and review of outstanding acute data.

Further consideration of this registration request will await submission of acceptable eye irritation and acute inhalation studies.

Sincerely,

Robert J. Taylor Product Manager 25 Fungicide-Herbicide Branch Registration Division (7505C)



# UNITED STATES ENVIRONMENTAL PROTECTION AGENCY WASHINGTON, D.C. 20460

OFFICE OF PREVENTION, PESTICIDES AND TOXIC SUBSTANCES

. 1. .

# MEMORANDUM

Subject: EPA File Symbol: 4787-EA

From:

Mark J. Perry, Biologist

Precautionary Review Section Registration Support Branch

Registration Division (7505W)

To:

R. Taylor, PM-25 / V. Walters

Registration Division (7505C)

Applicant: Cheminova, Inc

1700 Route 23, Suite 210

Wayne, NJ 07470

#### FORMULATION FROM LABEL:

	% by wt.
Active Ingredient(s): Glyphosate	96.0
<pre>Inert Ingredient(s):</pre>	4.0
Total:	100%

#### BACKGROUND

Cheminova submitted acute oral, acute dermal, acute inhalation, eye irritation, dermal irritation and dermal sensitization studies in support of Glyphosate Technical, EPA File Symbol 4787-EA. Glyphosate Technical is intended for manufacturing use only and contains 96.0% active ingredient. The subject studies were performed by Inveresk Research International and the assigned MRID numbers are 437280-03 through 437280-05 and 436327-02 through 436327-04.

#### RECOMMENDATION

- 1. Acute Oral; Category IV / Acceptable
- 2. Acute Dermal; Category III / Acceptable

PRS recommends the use of a semi-permeable material, such as perforated plastic, over the gauze patch to reduce evaporation of the moistened material.

## 3. Acute Inhalation; Unacceptable

This study is considered unacceptable due to the reported MMAD of 22.5 microns. PRS recommends that acute inhalation studies be performed with MMADs of approximately 4.0 microns or less. The registrant may choose to mechanically reduce the particle size of the test material and perform a new study. If small particles cannot be obtained, a waiver request may be appropriate.

### 4. Eye Irritation; Unacceptable

Because only one animal was tested and the study was terminated at 96 hours, an eye irritation category cannot be assigned. Additional data is needed to determine the appropriate irritancy category for this product.

- 5. Dermal Irritation; Category IV / Acceptable
- 6. Dermal Sensitization; Non-sensitizer / Acceptable

#### LABELING

Precautionary labeling recommendations will be provided following Agency review of the outstanding acute data.

#### DATA REVIEW FOR ACUTE ORAL TOXICITY TESTING (81-1)

Reviewer: M. Perry

Report Date: 6/22/89

Report No.: IRI5883

Product Manager: 25 MRID No.: 437280-03

Testing Facility: Inveresk Res.

Author(s): J. Cuthbert

Species: Rat

Age: --

Weight: 136-176 g

Source: Charles River

Test Material: Glyphosate Tech

Quality Assurance (40 CFR 160.12): Present

#### Conclusion:

1. LD<sub>50</sub> (mg/kg): Males= --

Females= --

Combined 5.0 g/kg

- The estimated LD<sub>50</sub> is greater than 5.0 g/kg.
- 3. Tox. Category: IV Classification: Acceptable

Deviations from 81-1: --

#### Results:

	(Number Killed/Number Tested)			
Dosage g/kg	Males	Females	Combined	
5.00	0/5	0/5	0/10	

#### DATA REVIEW FOR ACUTE DERMAL TOXICITY TESTING (81-2)

Product Manager:25 MRID No.:437280-04 Reviewer: M. Perry Report Date: 6/21/89

Testing Laboratory: Inveresk Res.

Report No.: IRI5884

Author(s): J. Cuthbert

Species: Rat

Weight: 188-240 kg Source: Charles River

Test Material: Glyphosate Tech

Quality Assurance (40 CFR 160.12):Present

#### Summary:

1. LC<sub>50</sub> (mg/kg): Males --

Females= --

Combined 2.0 g/kg

- The estimated LD<sub>50</sub> is greater than 2.0 g/kg.
- 3. Tox. Category: III Classification: Acceptable

Deviation From 81-2: --

#### Results:

# Reported Mortality

		(NUMBER KILLED/NUMBER TES		BER TESTED)	
DOSAGE g/	kg	Males	Females	Combined	
2.0.		0/5	0/5	0/10	

# DATA REVIEW FOR ACUTE INHALATION TOXICITY TESTING (81-3)

Reviewer: M. Perry

Report Date:8/25/89

Report No.: IRI5993

Product Manager: 25 MRID No.:436327-02

Testing Laboratory: Inveresk Res.

Author/ale D. Valorald

Author(s): P. McDonald

Species: Rat

Weight: 153-198 g Source: Charles River

Test Material: Glyphosate Tech

Quality Assurance (40 CFR 160.12): Present

### Summary:

1. LC<sub>50</sub> (mg/kg): Males --

Females = --

Combined= --

The estimated LC<sub>50</sub> has not been determined.

3. Mean Concentration: --

4. Tox. Category: -- Classification: Unacceptable

Deviation From 81-3: See recommendations

# Results:

# Reported Mortality

	(NUMBER KILLED/NUMBER TESTED)				
Exposure Concentration mg/L	Males	Females	Combined		
4.98	0/5	0/5	0/10		

MMAD = 22.5 microns

Nominal Concentration = 69.86 mg/L

#### DATA REVIEW FOR ACUTE EYE IRRITATION TESTING (81-4)

Reviewer: M. Perry

Report No.: IRI5886

Report Date:7/1/89

Product Manager: 25 MRID No.: 436327-03

Testing Laboratory: inveresk Res.

Author(s): J. Cuthbert

Species: RabbiT

Sex: 3 male, 3 female

Weight: --

Source: Cheshire Farms

Dosage: 100 mg

Test Material: Glyphosate Tech

Quality Assurance (40 CFR 160.12): Present

# Summary:

1. Toxicity Category: --

2. Classification: Unacceptable

Deviations From 81-4: See recommendations

Results: Grade 1-3 chemosis and redness was present in the test animal until the 72 hour observation. Opacity was present at 48 through 96 hours. The study was terminated at the 96 hour evaluations.

# DATA REVIEW FOR SKIN IRRITATION TESTING (81-5)

Reviewer: M. Perry

Report Date: 6/18/89

Report No.: IRI5885

Product Manager: 25 MRID No.: 436327-04

Testing Laboratory: Inveresk Res.

Author(s): J. Cuthbert

Species: Rabbit

Age: --

Sex:2 male, 4 female

Weight: --

Dosage: 0.5 g (moistened)

Test Material: Glyphosate Tech

Quality Assurance (40 CFR 160.12): Present

#### Summary:

1. The Primary Irritation Index= --

2. Toxicity Category: IV

3. Classification: Acceptable

Deviations From 81-5: --

Results: No irritation was reported at any evaluation period.

# DATA REVIEW FOR SKIN SENSITIZATION TESTING (81-6)

Reviewer: M. Perry

Report Date: 7/17/89

Report No.: IRI 5887

Product Manager: 25 MRID No.: 437280-05

Testing Laboratory: Inveresk Res.

Author(s): J. Cuthbert Species: Guinea pig

Weight: 302-466 g

Source: David Hall Ltd.
Test Material: Glyphosate Tech
Positive Control Material: DNCB

Quality Assurance (40 CFR 160.12): Present

Method: Magnusson-Kligman

#### Summary:

1. Classification: Non-sensitizer / Acceptable

#### Deviation From 81-6: --

Results: Induction was performed with 10% (injection) and 25% (topical). Challenge was also performed with a 25% concentration. Following challenge, comparison of the test and control groups did not demonstrate a sensitizing response. A positive control study successfully demonstrated a sensitizing response.

# ACUTE TOX ONE-LINER

1. PC CODE: 417300

2. CURRENT DATE: 3/26/96

3. TEST MATERIAL: Glyphosate Technical

Study/Species/Lab/ Study#/Date	MRID No.	Results	Tox.	Core Grade
81-1, Rat, Inveresk, IRI5883, 6/22/89	437280-03	LD50 5000 mg/kg	IV	A
81-2, Rat, Inveresk, IRI5884, 6/21/89	437280-04	LD50 2000 mg/kg	III	<b>A</b>
81-3, Rat, Inveresk, IRI5993, 8/25/89	436327-02	LC50 not determined		υ
81-4, Rabbit, Inveresk, IRI5886, 7/1/89	436327-03	Not determined		ŭ
81-5, Rabbit, Inveresk, IRI5885, 6/18/89	436327-04	No irritation	IV	A
81-6, Guinea pig, Inveresk, IRI5887, 7/17/89	437280-05	Non-sensitizer		A

# Core Grade Key:

A = Acceptable

S = Supplementary

U = Unacceptable

SUBJECT: Product Chemistry Review of Glyphosate Technical

TO: Vickie Walters, PM Team 25

Fungicide-Herbicide Branch/RD (7505C)

asmith FROM:

MAR 8 1996

Alfred Smith, Chemist Product Chemistry Review Section

Registration Support Branch/RD (7505W)

Harold Podall, Chief THRU:

Product Chemistry Review Section
Registration Support Branch/RD (7505W) 20 3/8/86

APPLICANT: Cheminova Agro A/S

DP BARCODE: D220024 EPA ID. NO: 4787-EA

#### INTRODUCTION

The applicant has requested the registration of the technical grade of the active ingredient (TGAI), Glyphosate Technical, which contains the active ingredient glyphosate. The information submitted in support of the registration is discussed below.

SERIES 61: PRODUCT IDENTITY AND COMPOSITION (MRID 43632701)

61-1: Product Identity and Disclosure of Ingredients

Glyphosate is the active ingredient (ai) in the TGAI produced by Cheminova Agro A/S. Glyphosate is glycine, N-(phosphonomethyl) -.

HO-P-CH2NH-CH2COOH

Common Name: Glyphosate

Other Names: Glyphosate Acid; PMG

CAS Name: glycine, N-(Phosphonomethyl)-,

CAS No: 1071-83-6 PCC No: 417300 Molecular Wt: 169.09

The composition of the TGAI is contained in the Confidential Statement of Formula (CSF, EPA Form 8570-4, dated April 20, 1995) and is summarized in the Confidential Appendix.

The information satisfies the requirements of 40 CFR 158.155. No additional information is needed.

61-2: Beginning Materials and Manufacturing Process
For a discussion of the beginning materials and the
manufacturing process, see the Confidential Appendix.

The information submitted satisfies the requirements of 40 CFR 158.160 - 158.162. No additional information is needed.

61-3: Discussion of the Formation of Impurities

For a discussion of the formation of impurities, see the
Confidential Appendix.

The information submitted satisfies the requirements of 40 CFR 158.167.No additional information is needed.

SERIES 62: ANALYSIS AND CERTIFICATION OF PRODUCT INGREDIENTS
(MRID 43728001)

62-1: Preliminary Analysis

Samples of the TGAI are examined for the active ingredient and its impurities by High Performance Liquid Chromatography (HPLC). The results of the analyses are discussed in the Confidential Appendix.

The information submitted satisfies the requirements of 40 CFR 158.170. No additional information is needed.

62-2: Certified Limits

Information on the certified limits are included in the Confidential Statement of Formula (CSF, EPA Form 8570-4, dated April 20, 1995). For a summary of the CSF, see the Confidential Appendix.

The information submitted satisfies the requirements of 40 CFR 158.175. No additional information is needed.

62-3: Enforcement Analytical Methods

Analytical methods are submitted which have been validated for the analysis of the active ingredient and its impurities in the TGAI. For a discussion of the methods, see the Confidential Appendix.

The information submitted satisfies the requirements of 40 CFR 158.180. No additional information is needed.

SERIES 63: PHYSICAL AND CHEMICAL CHARACTERISTICS (MRID 43728002)

The physical and chemical characteristics for the TGAI are summarized below.

Guidelines Reference Number(GRN)	Property	<u>Description</u>			
63-2	Color	White			
63-3	Physical State	Solid			
63-4	Odor	Odorless			
63-5	Melting Point	See Monsanto's LETTER OF AUTHORIZATION/CHEMINOVA, dated 02/02/95			
63-7	Density	1.655 at 20 C			
63-8	solubility	See Monsanto's LETTER OF AUTHORIZATION/CHEMINOVA, dated 02/02/95			
63-9	Vapor Pressure				
63-10	Dissociation Constant				
63-12	pH	1.97 +/- 0.015 at 25 C			
63-13	Stability	See Monsanto's LETTER OF AUTHORIZATION/CHEMINOVA, dated 02/02/95			

The information submitted satisfy the requirements of 40 CFR 158.190. No additional information is needed.

#### SUMMARY

The information submitted satisfies the requirements of 40 CFR 158.155 - 158.190 (Series 61, 62, 63) for the product Glyphosate Technical.

The product Glyphosate Technical is similar to Monsanto's Glyphosate Technical with respect to the active ingredient content.

ATTACHMENT: Confidential Appendix

#### CONFIDENTIAL APPENDIX

61-1: Product Identity and Disclosure of Ingredients (MRID 43632701); and, 62-2: Certified Limits

The Confidential Statement of Formula (CSF, EPA Form 8570-4, dated April 20, 2995) is reproduced below.

		Certified	Limits (%Wt)
Components	Nominal (%Wt)	Upper	Lower
Glycine, .	98.3	100.0	96.0
N-(Phosphonomethyl)-; Glyphosate, CAS 1071-83-6			图 45 多数

IMPURITIES\_

The information submitted adequately reflects the composition of the TGAI and meets the requirements of 40 CFR 158.155 and 40 CFR 158.175. No additional information is required.

61-2: Beginning Materials and Manufacturing Process (MRID 43632701)

#### CONFIDENTIAL APPENDIX

The information submitted satisfies the requirements of 40 CFR 158.160-162. No additional information is needed.

61-3: Discussion of the Formation of Impurities (MRID 43632701)

The impurities which are present in the TGAI and at detectable levels are included in the CSF.

The information submitted satisfies the requirements of 40 CFR 158.167. No additional information is needed.

62-1: Preliminary Analysis (MRID 43728001)

An adequate set of chromatograms is provided, and the method is adequately validated.

The information submitted satisfies the requirements of 40 CFR 158.170. No additional information is needed.

OCT | 7 1995

Ms. P. Leanne Pruett Cheminova, Inc 1700 Rt. 23, Suite 210 Wayne, NJ 07470

Dear Ms. Pruett:

Subject: Glyphosate Technical
EPA File Symbol 4787-EA
Your Letters Dated April 20 and July 7, 1995

This acknowledges receipt of your letters dated April 20 and July 7, 1995, transmitting a request for registration of a glyphosate technical. This request has been routed to the proper disciplines for comment. Further action will await completion of scientific review and evaluation.

The MRID's assigned the data accompanying these submissions are as follows:

Product Chemistry-Series 61	43632701
Product Chemistry-Series 62	43728001
Product Chemistry-Series 63	43728002
Acute Oral Toxicity 81-1	43728003
Acute Dermal Toxicity 81-2	43728004
Acute Inhalation 81-3	43632702
Acute Bye Irritation 81-4	43632703
Acute Skin Irritation 81-5	43632704
Dermal Sensitization 81-6	43728005

Sincerely,

Robert J. Taylor Product Manager 25 Fungicide-Herbicide Branch Registration Division (7505C)

CONCURRENCES								
SYMBOL	75050						7	
SURNAME	************				TANK THE			1 1 to 12 14
DATE	40/11/95	<b>西山</b>	24.34	<b>产品等</b>				

Cheminova, Inc. 1700 Rt. 23, Suite 210 Wayne, NJ 07470



Cheminova, Inc. Oak Hill Park 1700 Route 23, Suite 210 Wayne, New Jersey 07470 Phone: 201-305-6600 Fax: 201-305-1382 Customer service: 1-800-548-6113

July 7, 1995

437280-00

Mr. Robert J. Taylor (PM #25)
Office of Pesticide Programs(H7504C)
Document Processing Desk
U. S. Environmental Protection Agency
401 M Street, SW
Washington, DC 20460

RE: Corrected studies for Cheminova's Expedite "Me-Too" Application: *Glyphosate Technical* (EPA Reg. No. 4787 - £Å)

Dear Mr. Taylor:

As per EPA's letter of May 9, 1995 (please see, attached), we are hereby resubmitting three copies of the following Product Chemistry and Acute Toxicity studies for your approval:

- 1) Data Transmittal Document
- 2) Vol. 2 of 9 (Part 1) Product Chemistry, Guideline Series 62
- 3) Vol. 2 of 9 (Part 2) Product Chemistry, Guideline Series 62
- 4) Vol. 3 of 9 Product Chemistry, Guideline Series 63
- 5) Vol. 4 of 9 Acute Oral Toxicity, Guideline 81-1
- 6) Vol. 5 of 9 Acute Dermal Toxicity, Guideline 81-2
- 7) Vol. 9 of 9 Dermal Sensitization, Guideline 81-6

As indicated in our application cover letter of April 20, 1995, this application is being submitted as a "Me-Too" application, substantially similar to Monsanto's technical Glyphosate, and we request that the registration be issued on a Conditional basis.

For your convenience, I have enclosed two self-addressed stick on labels, with Cheminova, Inc.'s address. If you have any additional questions or problems regarding this application or these data, please contact me at your earliest convenience at (201) 305-6600.

್. Leanne Pruett

Manager of Regulatory Affairs Cheminova, Inc.

Encl.

cc: MF / KL / File (1)

# U.S. ENVIRONMENTAL PROTECTION AGENCY Office of Pesticide Programs

CHEMINOVA HOLDING A/S 1700 ROUTE 23 SUITE 210 WAYNE, NJ 07470

Report of Analysis for Compliance with PR Notice 86-5

Thank you for your transmittal of 07/21/95. Our staff has completed a preliminary analysis of the material. The results are provided as follows:

Your submittal was found to be in full compliance with the standards for submission of data contained in PR Notice 86-5. A copy of your bibliography is enclosed, annotated with Master Record ID's (MRIDs) assigned to each document submitted. Please use these numbers in all future references to these documents. Thank you for your cooperation. If you have any questions concerning this data submission, please raise them with the cognizant Product Manager, to whom the data have been released.



Cheminova, Inc. Oak Hill Park 1700 Route 23, Suite 210 Wayne, New Jersey 07470 Phone: 201-305-6600 Fax: 201-305-1382 Customer service: 1-800-548-6113

# DATA TRANSMITTAL DOCUMENT July 7, 1995

#### Name and Address of Submitter:

Cheminova Agro A/S

P. O. Box 9

DK-7620, Lemvig

Denmark

In U.S.:

Ms. P. Leanne Pruett

Manager of Regulatory Affairs

Cheminova, Inc.

1700 Route 23, Suite 210

Wayne, NJ 07470 Tel: (201) 305-6600

#### Studies Submitted:

4-3728001 Volume 2 of 9 (Parts 1 and 2)

Product Chemistry - GLYPHOSATE TECHNICAL - Guideline Series 62

Volume 3 of 9

43728002

Product Chemistry - GLYPHOSATE TECHNICAL - Guideline Series 63

Volume 4 of 9

43728003

Acute Oral Toxicity - GLYPHOSATE TECHNICAL - Guideline 81-1

Volume 5 of 9

43728004

Acute Dermal Toxicity - GLYPHOSATE TECHNICAL - Guideline 81-2

Volume 9 of 9

43728005

Dermal Sensitization - GLYPHOSATE TECHNICAL - Guideline 81-6

Submitted by:

P. Leanne Pruett

Manager of Regulatory Affairs, Cheminova, Inc.

Authorized Agent, Cheminova Agro A/S

Company Contact:

P. Leanne Pruett

(201) 305-6600



Cheminova, Inc. 1700 Route 23, Suite 210 Wayne, New Jersey 07470 Phone: 201-305-6600 Fax: 201-305-1382 Customer service: 1-800-548-6113

Office Of Pesticide Programs (H7504C) Document Processing Desk (APPL) U. S. Environmental Protection Agency 401 M Street, SW Washington, DC 20460 **U.S.A** 

April 20, 1995

MVF/-

436327-(/)

Attn.: Mr. Robert J. Taylor

Product Manager (Team 25)

Fungicide-Herbicide Branch (FHB) Registration Division (H7505C)

Re.: Expedite "Me-Too" Application:

Glyphosate Technical (EPA Reg. No. 4787 -

New Product Application

OPP ID # 2382945

Dear Mr. Taylor:

Please find attached Cheminova Agro's submission for application of the above listed subject product, Cheminova's Glyphosate Technical (EPA Reg. No. 4787 -). We are submitting for your approval:

#### **ADMINISTRATIVE**

- 1. Application Form 8570-1, OPP ID # 238295
- 2. Statement Identifying Substantially Similar or Identical Product for Data Citation (Copy of Monsanto's Letter of Authorization / Cheminova dated February 2, 1995 and sent to U. S. Environmental Protection Agency, Attention: Mr. Robert J. Taylor, Product manager (25)).
- 3. Confidential Statement of Formula, EPA Form 8570-4,
- 4. Five (5) copies of our proposed labeling,
- 5. Certification with Respect to Citation of Data, EPA Form 8570-29,
- 6. Data Reference Matrix,
- 7. Data Transmittal Document,

#### **DATA**

- 8. Data Transmittal Document (three copies)
- 9. Three Copies of Product Specific Chemistry Data:

Vol. 1 of 9 - Product Chemistry, FIFRA Guidelines' Series 61,

Vol. 2 of 9 - Product Chemistry, FIFRA Guidelines Series 62,

Vol. 3 of 9 - Product Chemistry, FIFRA Guidelines Series 63,

10 Three Copies of Product Specific Acute Toxicity Data:

Vol. 4 of 9 - Acute Oral Toxicity (Limit) Test in Rats, FIFRA Guideline

No. 81-1,

Vol. 5 of 9 - Acute Dermal Toxicity (Limit) Test in Rats, FIFKA Guideline No. 81-2,



Cheminova, Inc. Oak Hill Park 1700 Route 23, Suite 210 Wayne, New Jersey 07470 Phone: 201-305-6600 Fax: 201-305-1382 Customer service: 1-800-548-6113

Robert J. Taylor U. S. Environmental Protection Agency April 20, 1995 Page 2 of 2

- Vol. 6 of 9 Acute inhalation Toxicity Study in Rats, FIFRA Guideline No. 81-3,
- Vol. 7 of 9 Primary Eye Irritation Test in Rabbits, FIFRA Guideline No. 81-4,
- Vol. 8 of 9 Primary Skin irritation Test in Rabbits, FIFRA Guideline No. 81-5.
- Vol. 9 of 9 Magnusson-Kligman Maximisation Test in Guinea Pigs, FIFRA Guideline No. 81-6.

Also enclosed, please find two self-addressed stick on labels, showing the address of our authorized agent, Cheminova, Inc., for use in correspondence.

The enclosed application is a "Me-Too" application, therefore review should be expedited. The subject product is substantially similar to Monsanto's technical Glyphosate. We kindly request that the registration is issued on a "Conditional Basis".

Please be aware that the analyses of the 5 batches in Series 62 are made on batches from the production plant.

If you have any additional questions or problems regarding the registration of Cheminova Agro's product Glyphosate Technical, please contact me as soon as possible at (201) 305-6600.

P Leanne Pruett

Manager of Regulatory Affairs

Cheminova, Inc.

Encl.

./.

cc.: M. Friis / J. Weis / K. Halling / File (2)



Phone (+45) 97 83 41 00 Fax (+45) 97 83 45 55 Telex 66514 CHEMV DK A/S reg. no. 177.122

DATA TRANSMITTAL DOCUMENT April 20, 1995 Page 1 of 3

# TRANSMITTAL OF DATA IN SUPPORT OF APPLICATION FOR REGISTRATION OF GLYPHOSATE TECHNICAL

#### 1. Name and Address of Submitter

Cheminova Agro A/S

P.O. Box 9

DK-7620 Lemvig

Denmark

<u>US Address (Authorized Representative):</u>

Mr. Kurt Halling President

Cheminova, Inc.

Oak Hill Park 1700 Route 23, Suite 210

Wayne, New Jersey 07470 Phone: (201) 305-6600

#### 2. Regulatory Action Supported by This Package

The studies listed below are submitted in support of the application for registration of Glyphosate Technical by Cheminova Agro A/S.

#### 3. Transmittal Date

April 20, 1995

## 4. List of Studies Submitted With This Application

#### ADMINISTRATIVE MATERIALS

Form 8570-1 Application for Pesticide Registration.

Statement Identifying Substantially Similar or Identical Product for Data Citation (Copy of Monsanto's Letter of Authorization / Cheminova dated February 2, 1995 and sent to U. S. Environmental Protection Agency, Attention: Mr. Robert J. Taylor, Product manager (25).).

Form 8570-4 Confidential Statement of Formula.

Draft Labeling.

Form 8570-29 Certification with Respect to Citation of Data.

Data Matrix Chart.

# U.S. ENVIRONMENTAL PROTECTION AGENCY Office of Pesticide Programs

CHEMINOVA HOLDING A/S 1700 ROUTE 23 SUITE 210 WAYNE, NJ 07470

Report of Analysis for Compliance with PR Notice 86-5

Thank you for your transmittal of 05/02/95. Our staff has completed a preliminary analysis of the material. The results are provided as follows:

Your data submittal was found to be partially in compliance with the standards for submission of data contained in PR Notice 86-5, with the exceptions noted below. A copy of your transmittal bibliography is enclosed, annotated with the Master Record ID's (MRIDs) assigned to each document accepted. Please use these numbers in all future references to these documents. If deficiencies were found which apply to individual accepted studies, they are listed below following the applicable MRID. Any document which has been assigned a MRID has been accepted under PR Notice 86-5. If any comments related to a MRID appear on this report, they are provided for your information and reference when preparing future submissions. Some individual documents were not acceptable, and all copies are being returned to you for correction for the reasons indicated below. These rejected studies have been assigned separate identification numbers which are annotated on both the enclosed bibliography and the rejected document labels. The rejected studies and their deficiencies are described below.

# Rejected study [02] :

\* Judging from the pagination of the study, pages.... were omitted from the submitted copy.

# Rejected study [03] :

EPA's Good Laboratory Practice (GLP) regulation requires a 40 CFR 160.12 submission of a true and correct statement of compliance or non-compliance with the GLP requirements. An acceptable statement must address directly the study's compliance or non-compliance with the GLP regulation, without any disclaimers, and must describe the study submitted, not

the level of knowledge, understanding or belief of those who sign the statement. Qualifiers or disclaimers such as "based on someone else's signed statement," or "in the absence of any knowledge to the contrary," or "to the best of the signer's knowledge and belief" are unacceptable.

The GLP compliance statement provided in this study contains unacceptable language of the kind described above. You must eliminate the unacceptable language from the statement of GLP compliance or non-compliance before we can accept this study for further processing.

The Study director's signature on the GLP statement does not coincide with the study director's name found inside the study, therefore we cannot accept this GLP statement.

Studies (04) (05), (09) were all rejected for the following reasons/s:

A statement of compliance or non-compliance with the Good Laboratory Practices Standards contained in 40 CFR160 is required for all studies (except range finding studies and supplements to previously submitted studies) submitted to EPA. This statement must appear as page 3 of all studies, and must be signed and dated by the study sponsor, the study submitter, and the study director. Please see 40 CFR 160.12 for specific guidance.

Each study must be continuously paginated from the title page through the end of the study and all appendices--except for the Confidential Attachment or Supplemental Statement of Confidentiality Claims, if present--even when the study is large enough to span more than one physical volume.



Phone (+45) 97 83 41 00 Fax (+45) 97 83 45 55 Telex 66514 CHEMV DK A/S reg. no. 177.122

#### DATA TRANSMITTAL DOCUMENT

April 20, 1995 Page 2 of 3

#### PRODUCT CHEMISTRY DATA

#### Guidelines Series 61 - Product Identity

Friis, Merete V. (1993): Product Chemistry - GLYPHOSATE TECHNICAL (dry) - Guidelines Series 61. Guidelines Series 61, Product Identity: 61-1: Product Identity and Disclosure of Ingredients, 61-2(a): Description of Beginning Materials and Manufacturing Process, 61-2(b): Discussion of Formation of Impurities. MVF/01.03.93/PMG-USA. Unpublished study prepared by Cheminova Agro A/S Denmark. 25 pages.

#### Guidelines Series 62 - Product Chemistry

Friis, Merete V. (1993): Product Chemistry - GLYPHOSATE TECHNICAL (dry) - Guidelines Series 62. Guidelines Series 62, Analysis and Certification of Product Ingredients: 62-1: Preliminary Analysis of Product Samples, 62-2: Certification of Ingredient Limits. 62-3: Analytical Methods to Verify Certified Limits. MVF/00.03.93/PMG-USA. Unpublished study prepared by Cheminova Agro A/S Denmark. 506 pages.

#### Guidelines 63-2, 3 and 4 - Statements of Colour, Physical State and Odour

Wise, John M. (1995) Statements of Physical Characteristics of Glyphosate Technical, unpublished report prepared by John Wise & Associates, Ltd. Liberty, MO, USA. 4 pages.

#### Guideline 63-7 - Density

Robson, M. M. (1991) Glyphosate Determination of Relative Density: HUK 6758-676/5. Unpublished report prepared by Hazleton UK, England. 52 pages.

#### Guideline 63-12 - pH

Wells, D. F. (1995) Glyphosate - Product Chemistry Study: pH. SLI Report # 95-3-5748. Unpublished study prepared by Springborn Laboratories, Inc., U. S. A., 26 pages.

#### Guideline 63-15 - Flammability

Van Helvoirt, J.A.M.W. (1989) Determination of the Flammability of Glyphosate: RCC Notox Project 015244. Unpublished study prepared by RCC Notox Research and Consulting Company b.v., The Nederlands. 25 pages.

#### ACUTE TOXICITY DATA

#### Guideline 81-1 Acute Oral Toxicity

Cuthbert, J. A. and Jackson, D. (1989) Glyphosate Technical: Acute Oral Toxicity (Limit) Test in Rats: IRI 5883. Unpublished study prepared by Inveresk Research International, Scotland. 23 pages.

### Guideline 81-2 Acute Dermal Toxicity

Cuthbert, J. A. and Jackson, D. (1989) Glyphosate Technical: Acute Dermal Toxicity (Limit) Tect in Rats: IRI 5884. Unpublished study prepared by Inveresk Research International, Scotland. 22 pages.

#### Guideline 81-3 Acute Inhalation

McDonald, P. and Anderson, B. T. (1989) Glyphosate Technical: Acute Inhalation Toxicity Study in Rats (Limit Test): IRI 5993. Unpublished study prepared by Inveresk Research International, Scotland. 39 pages.



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#### DATA TRANSMITTAL DOCUMENT

April 20, 1995 Page 3 of 3

**ACUTE TOXICITY DATA, continued** 

43632703

Guideline 81-4 Acute Eye Irritation

Cuthbert, J. A. and Jackson, D. (1989) Glyphosate Technical: Primary Eye Irritation Test in Rabbits: IRI 5886. Unpublished study prepared by Inveresk Research International, Scotland. 23 pages.

43632704

Guideline 81-5 Acute Skin Irritation

Cuthbert, J. A. and Jackson, D. (1989) Glyphosate Technical: Primary Skin Irritation Test in Rabbits: IRI 5885. Unpublished study prepared by Inveresk Research International, Scotland. 22 pages.

REJ(09)

Guideline 81-6 Dermal Sensitization

Cuthbert, J. A. and Jackson, D. (1989) Glyphosate Technical: Magnusson-Kligman Maximisation Test in Guinea Pigs: IRI 5887. Unpublished study prepared by Inveresk Research International, Scotland. 30 pages.

Company Official:

Kristian Lystbæk

Senior Registration Specialist

Name and Title

Signature

Date: April 20, 1995

Company Name:

Cheminova Agro A/S

Company Contact:

Kristian Lystbæk

(+45) 97834100

Name

Phone



# UNITED STATES ENVIRONMENTAL PROTECTION AGENCY WASHINGTON, D.C. 20460

May 3, 1995

CHEMINOVA AGRO A/S C/O CHEMINOVA, INC 1700 ROUTE 23, STE 210 WAYNE, NJ 07470

OFFICE OF PREVENTION, PESTICIDES AND TOXIC SUBSTANCES

ATTN: P. LEANNE PRUETT

PRODUCT NAME: GLYPHOSATE TECHNICAL
COMPANY NAME: CHEMINOVA AGRO A/S
OPP IDENTIFICATION NUMBER: 238295
EPA FILE SYMBOL: 4787-EA
EPA RECEIPT DATE: 05/02/95

SUBJECT: RECEIPT OF APPLICATION FOR A NEW REGISTRATION

#### DEAR REGISTRANT:

The Office of Pesticide Programs has received your application for a new registration and it has passed an administrative screen for completeness.

The package will now be forwarded to the Product Manager for review to determine its acceptability.

If you have any questions please contact Robert Taylor. Product Manager 25, at (703)305-6800.

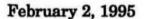
Sincerely,

Front End Processing Staff Information Services Branch

Program Management and Support Division

## Monsanto

Monsanto Company Suite 1100 700 14th Street, N.W. Washington, D.C. 20005



Office of Pesticide Programs - H7504C Document Processing Desk U.S. Environmental Protection Agency Room 226A, Crystal Mall #2 1921 Jefferson Davis Highway Arlington, Virginia 22202

Attention:

Mr. Robert J. Taylor

Product Manager (25)

Subject:

Letter of Authorization / Cheminova

Dear Sir:

This letter authorizes the Environmental Protection Agency to reference pertinent files of Monsanto's Glyphosate Registration Data, except product specific data (product chemistry and acute toxicity studies), which are essential to support Cheminova's application to register Glyphosate Technical in the United States. Monsanto specifically denies authorization to reference product specific data.

This authorization extends to EPA registration personnel only, to data assigned a MRID number and in the files and records of the EPA only, and to registrations in the United States only. Monsanto specifically denies authorization to use or consider said data, directly or indirectly, in support of any subsequent application submitted by the applicant or by any other person, including applications for new registrations or amended registration.

This letter of authorization specifically denies permission to release this data to the applicant. Furthermore, Monsanto retains and reserves to itself all data ownership and compensation rights in and to the referenced data, and does not convey or transfer any such rights with this authorization.

February 2, 1995 Page 2

If you have any questions regarding this letter, please contact me.

Sincerely,

Sheila A. Schuette, Ph.D. Manager, Regulatory Affairs

Shila Q. Schuette

(314) 694-7248

cc: R.P. Schneider

K. Lystbaek - Cheminova

Form Approved, OMB No. 2070-0060, Approval expires 2-28-95

**United States** 

XX	Registration
4	Amendment
	Other

**OPP Identifier Number** 

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Park 10 10 10 1 1 1 1 1	ska suren afferd	pplication	for Pesticide -	Section I	1 5 25	e a managara se q
1. Company/Product Numbe 4787- EA	74-3	e is St.	2. EPA Produc Robert J.	200	3. Prop	osed Classification
<ol> <li>Company/Product (Name) GLYPHOSATE TECHNICA</li> </ol>		Large William	PM# 25	was reading to	Stray Const.	
5. Name and Address of App Cheminova Agro A/S P. O. Box 9 DK-7620 Lemvig Denmark  Check if this	The second secon	entative ite 210		duct is similar or ide		IFRA Section 3(c)(3) position and labeling
			at B C A	and the second of the	4	Service Service
Notification - Explain	ponse to Agency letter d		Agen   XX   Me   Other	printed labels in respon cy letter dated Too" Application. r - Explain below.	t Tt Dor	PRESIDE
Explanation: Use addition	na pagota) ii necessary.	troj section	Section - III		7766 11 A	
1. Material This Product Wil	I Be Packaged In:	- 14	on the man	- How I was	The state of	Water and a
Child-Resistant Packaging Yes* No Certification must be submitted	Unit Packaging Yes XX No If "Yes" Unit Packaging wgt.	No. per container		ng 2. Type	Metal Plastic Glass Paper Other (Sp	ecify)
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6. Manner in Which Label is	Affixed to Product	XX Paper glu Stenciled	ph ued	Other .		2 (1) (1) (1) (1) 2 (1) (1) (1) (1)
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1. Contact Point (Complete	items directly below for			acted, if necessary, to		
Name Kristian Ly	stbæk	the residence of the latest	itle Senior Registration	n Specialist	Telephone	No. Include Area Code)
	ements I have made on t ny knowingly false or mi law.		I attachments thereto a			Pets Application Received (Otamped)
2. Signature	flel	3.	Title Senior Registration	on Specialist		Burnella Maria
4. Typed Name Kristian Lys	tbæk	5.	Date April 20, 1995			Care to the

#### PAPERWORK REDUCTION ACT NOTICE and INSTRUCTIONS:

PAPERWORK REDUCTION ACT NOTICE: Public reporting burden for this collection of information is estimated to average 0.85 hour per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Chief, Information Policy Branch, (2136), U.S. Environmental Protection Agency, 401 M Street, SW, Washington, DC 20460; and to the Office of Information and Regulatory Affairs, Office of Management and Budget, Washington, DC 20503.

INSTRUCTIONS: This form is to be used for all applications for new registration, end use reregistration, amendment, resubmission, to applications for notifications, final printed labeling, reregistration, etc. In order to process an application for a new registration submitted on this form, the following material must accompany the application:

- 1. Certification with Respect to Citation of Data (EPA Form 8570-29). [If not exempted by 40 CFR 152.81 (b) (4)];
- 2. Confidential Statement of Formula (EPA Form 8570-4);
- 3. Formulator's Exemption Statement (EPA Form 8570-27);
- 4. Five copies of draft labeling;
- 5. Three copies of any data submitted;
- 6. Authorization letter where applicable;
- Matrices where applicable.

Submission of Labeling - Labeling should first be submitted in the form of draft labels with all applications for new registration. Such draft labels may be in the form of typed label text on 8.5 x 11 inch paper for submission or a mockup of the proposed label. If prepared for mockup, it should be constructed in a way as to facilitate storage in an 8.5 x 11 inch file. Mockup labels significantly smaller than 8.5 x 11 inches should be mounted on 8 x 11 inch paper for submission.

Submission of Data - Data submitted in support of this application must be submitted in accordance with PR Notice 86-5.

SPECIFIC INSTRUCTIONS: Please read the instructions listed below before completing this application. First determine the type of registration action, listed in Block A, for which you are submitting this application. For applications submitted in connection with New Registration actions, Sections I, III, and IV must be completed by the applicant. For applications submitted in connection with amended reregistration actions, resubmissions, notifications, reregistrations, etc., Sections I, II, and IV must be completed by the applicant. Block A - Check the appropriate action for which you are submitting this form.

SECTION | - This section must be completed, as applicable, for all registration actions.

- Company/Product Number Insert your Company Number, if one has been assigned by EPA. This number may have been assigned to you as a basic registrant, a distributor, or as an establishment. If your product is registered, insert the Product Number.
- EPA Product Manager If known, fill in the name and PM number of the EPA Product Manager.
- Proposed Classification Specify the proposed classification of this product.
- Product Name Enter the complete product name of this pesticide as it will appear on the label. The name must be specific to this product only. Duplication of names is not permitted among products of the same company. Do not include any brand name or company line designations.
- 5. Name and Address of Applicant The name of the firm or person and address shown in your application is the person or firm to whom the registration will be issued. If you are acting in behalf of another party, you must submit authorization from that party to act for them in registration matters. An applicant not residing in the United States must have an authorized agent residing in the United States to act for them in all registration matters. The name and complete mailing address of such an agent must accompany this application.
- Expedited Review FIFRA section 3 (c) 3 (B) provides for expedited review of applications for registration, or amendments to existing registration that are similar or identical to other pesticide products that are currently registered with the EPA. In order for your application to be eligible for expedited review, you must provide us with the EPA Registration Number and product name of the product you believe is similar to or identical to your product. The product must be similar or identical in both formulation and labeled uses.

SECTION II - This section must be completed for all applications submitted to amend the registration only of a currently registered product (Amendment), for a resubmission in response to an Agency letter, for notifications to the Agency, for the submission of final printed labeling, for reregistration and for any other action that pertains to a specific EPA-registered product. This section is not to be used for a new application for registration.

1. Subject of submission - Check the applicable block and provide the Agency letter date if appropriate. Provide a brief explanation of the purpose(s) for the submission, such as "the addition of a site, pest or crop (specify)"; "amend the Confidential Statement of Formula by..."; "reregistration submission"; "general label revision of use directions." Attach a separate page if additional space is needed.

SECTION III (Packaging and Container Information) - This Section must be completed for all applications submitted in connection with new registration or applicable amendments.

- 1. Type of Packaging Check to appropriate block if your product will be packaged in the indicated packaging types. Indicate the size of the individual packets and number per retail container.
- Type of Retail Container Indicate type of container in which product will be marketed.
   Location of Net Contents Indicate the location of the net contents information for your product.
   Size(s) of Retail Container Specify the net contents of all retail containers for your product.
- 5. Location of Use Directions Indicate the location of the use directions for your product.
- 6. Manner in which label is affixed to product Indicated the method product label is attached to retail container.

SECTION IV (Chract Point) - This Section must be completed for all applications for Registration actions, i.e., new products registration, resubmission, "me-too," reregistration, etc.

- 1-5. Self-explanatory.
- 6. EPA Use Only.

### **SEPA**

United States

#### Environmental

Protection Agency

tal Protection Agent Washington, DC 20460 Form Approved OMB No. 2070-0060 Approval Expires 02-28-95

Certification with Respect to Citation of Data

Applicants Name and Address

Cheminova Agro A/S P.O. Box 9 DK-7620 Lemvig Denmark Authorized Representative: Cheminova, Inc. 1700 Route 23, Suite 210 Wayne, New Jersey 07470 EPA File Symbol/Registration Number 4787— FA

Product Name GLYPHOSATE TECHNICAL

Date of Application

**NOTE:** If your product is a 100% repackaging of another EPA-registered product that you purchase, and is labeled for the same uses, you do not need to submit this form. You must submit the Formulator's Exemption Statement (EPA Form 8570-27).

- 1. This application is supported by all data submitted or cited in the application. In addition, if cite-all options are indicated, this application is supported by all data in the Agency's files that concern the properties or effects of this product that is identical or substantially similar and that is one of the types of data that would be required to be submitted if this application sought the initial registration of a product of identical or similar composition and intended uses under the data requirements in effect on the date of approval of this application. (Check the appropriate boxes, in items 2 and 3, or 4 below that pertain to your application.)
- 2. I certify that, for each study cited in support of this application for registration that is an exclusive use study. I am the original submitter\*; or **GLYPHOSATE** I have obtained the written permission of the original submitter for which is (insert name of chemical) MONSANTO AGRI. CO (for multiple chemicals link the companies who are original data submitters (insert names of companies) with the appropriate chemical name) to cite that study\* 3. I certify that, for each study cited in support of this application for registration that is not an exclusive use study; I am the original data submitter\*; or I have obtained the written permission of the original data submitter for GLYPHOSATE which is (insert name of chemical) (for multiple chemicals link the companies who are original data submitters MONSANTO AGRICULTURAL CO. (insert names of companies) with the appropriate chemical name) to cite that study\*; or b. I have notified in writing the companies that (insert names of companies) (insert name of chemical) have submitted data I have cited to support this application and have offered to: (a) Pay compensation for those data in accordance with section 3(c)(1)(F) and 3(c)(2)(D) of the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA); and (b) Commence negotiations to determine which data are subject to the compensation requirement of FIFRA and the amount and terms of compensation due, if any. The companies I have notified are: (for multiple Companies for (insert names of companies) (insert name of chemical) chemicals link the companies who are original data submitters with the appropriate chemical name) listed on the Pesticide Data Submitters List for all active ingredients contained in my product (cite-all method or cite-all option under Selective Method\*). (Also, sign the General Offer Statement below.) Companies (for multiple (insert name of chemical) (insert names of companies) chemicals link the companies who are original data submitters with the appropriate chemical name) that have submitted the studies which I have cited (Selective method\*). I certify that for each study cited in support of this application I am not required to offer data compensation or obtain written permission because all time periods for exclusive use and data compensation have expired. \* A Data Matrix identifying these studies is attached. (Note: a Data Matrix is not required under the cite-all method) Kristian Lystbæk Name and Title Signature Date April 20, 1995 Senior Registration Specialist General Offer to Pay: I hereby offer and agree to pay compensation to other persons, with regard to the approval of this application, to the extent required. Kristian Lystbæk Signature Name and Title Date April 20, 1995 Senior Registration

# LISTING OF STUDIES SUBMITTED IN SUPPORT OF EPA DATA REQUIREMENTS FOR REGISTRATION OF GLYPHOSATE TECHNICAL

PRODUCT	<b>7</b> F			ý	/ FILE SYMBOL: / 787 – EA	FORMULAT EXEMPTION YES	N SELECTED:	PAGE _1 OF _9_	
APPLICAN Cheminova 2 P.O. Box 9 DK-7620 Le Denmark Phone: +(45	mvig Oak Hill P	s (Authorized Ro a. Inc.	epresentative):	APPLICATION REGISTRATIO	FOR ON DATED:	NAME OF ACTIVE INGREDIENT(S):  _Glyphosate			
40 CFR Par DATA REQ	t 158 - UIREMENTS	SOURCE OF DATA SATISFYING REQUIREMENT							
Guideline Reference No.	Name of Test	Submitted by Applicant	Date Submitted  Mo/Da/Ye	Submitted by another person / firm	Certificate of Permission (P) or Offer to Pay (OTP) enclosed: (Indicate "P" or "OP")	Public Literature	N.A. or Waiver or Other (explain)	MRID No., EPA Accession No., or other identifying No.	
Section 158.190	Product Chemistry								
61-1	Identity of Ingredients	1	04/20/95						
61-2	Beginning Materials & Manufacturing Process	1	04/20/95						
61-3	Discussion of Formation of Impurities	1	04/20/95						
62-1	Preliminary Analysis	1	04/20/95	,					
62-2	Certification of Limits	1	04/20/95						
62-3	Analytical Method for Enforcement Limits	4	04/20/95						
63-2	Color	1	04/20/95						
63-3	Physical State	1	04/20/95						
63-4	Odor	1	04/20/95						

PRODUCT	NAME: Glyphosate Techn	ical		EPA REG. N	NO./FILE SYMBOL:	FORMULATOR'S EXEMPTION SELECTED:		PAGE 2 D: OF 9	
APPLICAN	T (COMPANY) NAME AND	ADDRESS:			None 4787-EA	YES	NO √		
Cheminova.	Agro A/S <u>US Addr</u>	ess (Authorized Represer	ntative):	APPLICATI	ON FOR	NAME OF ACTIVE INGREDIENT(S):			
P.O. Box 9	Chemino	•		REGISTRA	TION DATED:	`,			
DK-7620 Le	•					Glyphosate			
Denmark Phone: +(45		ite 23, Suite 210 New Jersey 07470		Ap	ril 20, 1995		31		
Phone: +(43		201) 305-6600							
40 CFR PA	RT 158 -		SOURCE OF DATA SATISFYING REQUIREMENT						
DATA REC	QUIREMENTS								
Guideline Reference No.	Name of Test	Submitted by Applicant	Date Submitted Mo/Da/Ye	Submitted by another person / firm	Certificate of Permission (P) or Offer to Pay (OTP) enclosed: (Indicate "P" or "OP")	Public Literature	MRID No., EPA Accession No. or other identifying No.		
Section 158.190	Product Chemistry (Continu	ied)							
63-5	Melting Point		15/07/86	Monsanto	P			00161333	
63-7	Density	1	20/04/95						
63-8	Solubility		15/07/86	Monsanto	P			00161333	
63-9	Vapour Pressure		15/07/86,	Monsanto	P			00161333,	
			16/05/89	1				41096101	
63-10	Dissociation Constant		15/07/86	Monsanto	P			00161333	
63-11	Octanol/Water Partition		15/07/86	Monsanto	P			00161333	
63-12	pH	<b>√</b>	20/04/95						
63-13	Stability		15/07/86, 21/03/88	Monsanto	Р			00161333, 40559301	
63-15	Flammability	1	20/04/95						
63-17	Storage Stability		-						
63-20	Corrosion		1-		<del> </del>			<u> </u>	

PRODUCT	NAME: Glyphosate	Technical		EPA REG. NO.	/ FILE SYMBOL:	FORMULAT		PAGE 3			
	NT (COMPANY) NAMI		•	N	one 4787-EA	EXEMPTION YES	NO _√	OF _9			
Cheminova Ag P.O. Box 9 DK-7620 Lemv Denmark Phone: +(45) 9	Cheminova, I vig Oak Hill Parl 1700 Route 2 7834100 Wayne, New	k 23, Suite 210 Jersey 07470	sentative):	APPLICATION REGISTRATION	FOR DATED:	NAME OF ACTIVE INGREDIENT(S): Glyphosate					
40 CFR Par	Phone: (201)	305-6600	· -· · · · · · · · · · · · · · · · · ·	April 20, 1995 Glypnosate							
	UIREMENTS			SOURCE OF	DATA SATISFYIN	G REQUIREN	MENT				
Guideline Reference No.	Name of Test	Submitted by Applicant	Date Submitted	Submitted by another person / firm	Certificate of Permission (P) or Offer to Pay (OTP) enclosed: (Indicate "P" or "OP")	Public Literature	N.A. or Waiver or Other (explain)	MRID No., EPA Accession No., or other identifying No.			
<u>Section</u> 158,490	Ecological Effects										
71-1A	Acute Avian Oral - Quail		7/14/78	Monsanto	P			00108204			
71-2A	Avian Dietary - Quail		11/9/73	Monsanto	P			00076492			
71-2B	Avian Dietary - Duck		7/12/74	Monsanto	P			00108107			
71-3	Wild Mammal Toxicity		11/9/73	Monsanto	P			00076492			
71 <u>-4</u> A	Avian Reproduction - Quail		11/13/78	Monsanto	P			00108207			
71 <b>-</b> 4B	Avian Reproduction - Duck		9/26/75 11/13/78	Monsanto	P			00036328 00111953			
72-1A	Fish Toxicity Bluegill		1979			1		GS-0178025			
72-1C	Fish Toxicity Rainbow Trout		7/12/74 7/14/78	Monsanto	P			00108112 00108205			
72-2A	Invertebrate Toxicity		12/27/78	Monsanto	P			00108172			
72-3B	Estuarine/Marine Toxicity - Mollusk		7/12/79	Monsanto	P			00108110			

PRODUCT				:	/ FILE SYMBOL: one 4787-EA	FORMULAT EXEMPTION YES	N SELECTED:		
Cheminova P.O. Box 9	Cheminova, Inc	horized Repres		110					
DK-7620 Le Denmark Phone: +(45	1700 Route 23	Suite 210 rsey 07470 05-6600		APPLICATION REGISTRATIO		NAME OF ACTIVE INGREDIENT(S):  Glyphosate			
40 CFR Pai DATA REC	t 158 - QUIREMENTS			EMENT					
Guideline Reference No.	Name of Test	Submitted by Applicant	Date Submitted	Submitted by another person / firm	Certificate of Permission (P) or Offer to Pay (OTP) enclosed: (Indicate "P" or "OP")	Public Literature	N.A. or Waiver or Other (explain)	MRID No., EPA Accession No., or other identifying No.	
Section 158.490	Ecological Effects								
72-3C	Estuarine/Marine Toxicity - Shrimp		7/12/74	Monsanto	P			00108111	
72-4B	Life Cycle Invertebrate		12/27/82	Monsanto	P			00124763	
72-5	Life Cycle Fish		12/27/78	Monsanto	P			00108171	
<u>Section</u> 158.540	Ecological Effects								
122-1 <b>A</b>	Seed Germination / Seedling Emergence		1987	Monsanto	P			40159301	
122-2 & 122-3	Aquatic Plant Growth		1987	Monsanto	P			40236901 40236902 40236903 40236904 40236905	
Section 158.590				-					
141-1	Honey Bee - Acute Contact		1972	Monsanto	P			00026489	

Cheminova P.O. Box 9	IT (COMPANY) NAME Agro A/S US Address Cheminov	AND ADDR (Authorized R			FILE SYMBOL: one 4787-EA	FORMULAT EXEMPTION YES	PAGE 5 OF 9		
DK-7620 Le Denmark	OK-7620 Lemvig Denmark Phone: +(45) 97834100  Oak Hill Park 1700 Route 23, Suite 210 Wayne, New Jersey 07470 Phone: (201) 305-6600				FOR ON DATED:	NAME OF ACTIVE INGREDIENT(S):  Glyphosate			
40 CFR Pa	rt 158 - QUIREMENTS			<u> </u>	F DATA SATISFYIN	G REQUIRE	MENT		
Guideline Reference No.	Name of Test	Submitted by Applicant	Date Submitted	Submitted by another person / firm	Certificate of Permission (P) or Offer to Pay (OTP) enclosed: (Indicate "P" or "OP")	Public Literature	MRID No., EPA Accession No., or other identifying No.		
Section 158.340	TOXICOLOGY								
81-1	Acute Oral Toxicity (rat)	1	04/20/95						
81-2	Acute Dermal Toxicity (rat)	1	04/20/95						
81-3	Acute Inhalation (rat)	1	04/20/95						
81-4	Acute Eye Irritation (rabbit)	1	04/20/95						
81-5	Acute Skin Irritation (rabbit)	1	04/20/95						
81-6	Dermal Sensitization (guinea pig)	1	04/20/95						
82-1A	90-Day Feeding - Rodent		7/2/80 1987	Monsanto	P			0003680 4055940	

Monsanto

4/12/82

P

82-2

21-Day Dermal -Rabbit/Rat

00098460

PRODUCT	NAME: Glyphosate Techn IT (COMPANY) NAME AND A	, T. C.			rile symbol: one 4787-EA	FORMULATOR'S EXEMPTION SELECTED: YES NO		PAGE _ 6 _ OF _ 9 _	
Cheminova P.O. Box 9 DK-7620 Le Denmark	Cheminova Agro A/S P.O. Box 9 DK-7620 Lemvig Denmark Phone: +(45) 97834100  US Address (Authorized Repriction Content of the Inc.) Oak Hill Park 1700 Route 23, Suite 210 Wayne, New Jersey 07470 Phone: (201) 305-6600		tive):				NAME OF ACTIVE INGREDIENT(S):  Glyphosate		
				Apr	ril 20, 1995				
40 CFR Par DATA REC	rt 158 - QUIREMENTS				DATA SATISFYIN	G REQUIRE	MENT		
Guideline Reference No.	Name of Test	Submitted by Applicant	Date Submitted	Submitted by another person / firm	Certificate of Permission (P) or Offer to Pay (OTP) enclosed: (Indicate "P" or "OP")	Public Literature	N.A. or Waiver or Other (explain)	MRID No., EPA Accession No., or other identifying No.	
Section 158.340	TOXICOLOGY								
83-1A	Chronic Feeding Toxicity - Rodent		4/12/82 1/20/82	Monsanto	P			00098460 00093879	
83-1B	Chronic Feeding Toxicity - Non-Rodent		1986 1985	Monsanto	P			00162912 00153374	
83-2A	Oncogenicity - Rat		1990 1990 1/20/82	F .	P			4172870 4164380 00093879	
83-2B	Oncogenicity - Mouse		8/17/83 7/21/83	Monsanto	P			00130406 00150564	
83-3A	Developmental Toxicity - Rat		5/23/80	Monsanto	P			00046362	
83-3B	Developmental Toxicity -Rabbit		5/23/80	Monsanto	P		·	00046363	
83-4	2-Generation Reproduction -Rat		9/22/81 7/6/82 1990		P			00081674 00105995 41621501	

PRODUCT	NAME: Glyphosate Tech	ınical			/ FILE SYMBOL:		N SELECTED:	PAGE _ 7 OF _ 9	
Cheminova P.O. Box 9	Agro A/S  US Address (Author Cheminova, Inc.	ADDRESS: rized Representat	tive):	No	one 4787-EA	YES	_ NO <u>√</u> _		
DK-7620 Le Denmark Phone: +(45	1700 Route 23 Su	ute 210 cy 07470 6600		APPLICATION REGISTRATIO		1	NAME OF ACTIVE INGREDIENT(S):  Glyphosate		
		<del></del>		Ap:	ril 20, 1995				
40 CFR Par DATA REC	rt 158 - QUIREMENTS			SOURCE OI	F DATA SATISFYIN	G REQUIRE	MENT		
Guideline Reference No.	Name of Test	Submitted by Applicant	Date Submitted	Submitted by another person / firm	Certificate of Permission (P) or Offer to Pay (OTP) enclosed: (Indicate "P" or "OP")	Public Literature	N.A. or Waiver or Other (explain)	MRID No., EPA Accession No., or other identifying No.	
Section 158.340	TOXICOLOGY								
84-2A	Gene Mutation (Ames Test)		4/25/79 11/15/83	Monsanto	P			00078620 00132683	
84-2B	Structural Chromosomal Aberration		5/23/80 11/15/83 11/15/83		P			00046364 00132681 00132685	
84-4	Other Genotoxic Effects		4/25/79 11/15/83 11/15/83	1	P			00078619 00132686 00132685	
85-1	General Metabolism		1988 1988	Monasnto	P			40767101 40767102	
Home 158.290	ENVIRONMENTAL FATE								
161-1	Hydrolysis		7/12/78	Monsanto	P			00108192	
161-2	Photodegradation - Water		1990	Monsanto	P			41689101	
161-3	Photodegradation- Soil		1989	Monsanto	P			41335101	

PRODUCT	PRODUCT NAME: Glyphosate Technical					/ FILE SYMBOL:	FORMULAT EXEMPTION	PAGE <u>8</u> OF <u>9</u>		
APPLICANT (COMPANY) NAME AND ADDRESS:  Cheminova Agro A/S P.O. Box 9  US Address (Authorized Representative): Cheminova, Inc.					No	one	YES			
DK-7620 L Denmark	DK-7620 Lemvig Oak Hill Park				APPLICATION REGISTRATION		NAME OF ACTIVE INGREDIENT(S):  Glyphosate			
					April	20, 1995				
40 CFR Part 158 - DATA REQUIREMENTS					SOURCE OF	DATA SATISFYI	G REQUIREN			
Guideline Reference			Date Submitted	Submitted by another person	Certificate of Permission (P) or	Public Literature	N.A. or Waiver or	MRID No., EPA Accession		

DATA RE(	QUIREMENTS	SOURCE OF DATA SATISFYING REQUIREMENT									
Guideline Reference No.	Name of Test	Submitted by Applicant	Date Submitted	Submitted by another person / firm	Certificate of Permission (P) or Offer to Pay (OTP) enclosed: (Indicate "P" or "OP")	Public Literature	N.A. or Waiver or Other (explain)	MRID No., EPA Accession No., or other identifying No.			
Section 158.290	Environmental Fate (Cont'd)										
162-1	Aerobic Soil Metabolism		1992	Monsanto	P			42372501			
162-3	Anaerobic Aquatic Metabolism		1992	Monsanto	P			42372502			
162-4	Aerobic Aquatic Metabolism		1992	Monsanto	P			42372503			
163-1	Leaching/Adsorption/ Desorption		7/12/78	Monsanto	P			00108192			
164-1	Terrestrial Field Dissipation		1993	Monsanto	P			42765001			
164-2	Aquatic Field Dissipation		1992	Monsanto	P			42383201			
164-3	Forest Field Dissipation		1990	Monsanto	P			41552801			
165-1	Confined Rotational Crop		1992 1990 1990		P			42372504 41543201 41543202			

PRODUCT	NAME: Glyphosate Techni	ical	-		/ FILE SYMBOL:	FORMULATOR'S EXEMPTION SELECTED:		PAGE 9 OF 9
APPLICAN	T (COMPANY) NAME AND A	DDRESS:		No	one	YES	NO <u>√</u>	
Cheminova P.O. Box 9	Cheminova Inc.	zed Representa	tive):					
DK-7620 Le Denmark Phone: +(45	Oak Hill Park 1700 Route 23, Sui 9 97834100 Wayne, New Jersey Phone: (201) 305-6	ite 210 y 07470 6600		APPLICATION REGISTRATIO		NAME OF ACTIVE INGREDIENT(S):  Glyphosate		
				A	pril 20, 1995			
40 CFR Par DATA REC	rt 158 - QUIREMENTS			SOURCE OF	F DATA SATISFYIN	G REQUIREN	MENT	
Guideline Reference No.	Name of Test	Submitted by Applicant	Date Submitted	Submitted by another person / firm	Certificate of Permission (P) or Offer to Pay (OTP) enclosed: (Indicate "P" or "OP")	Public Literature	N.A. or Waiver or Other (explain)	MRID No., EPA Accession No., or other identifying No.
Section 158.290	Environmental Fate (contd)							
165-3	Accumulation - Irrigated Crops		1992 1988	Monsanto	P			42372505 40541305
165-4	Bioaccumulation in Fish		1989	Monsanto	P			41228301
Section 158.440	Spray Drift							
201-1	Droplet size spectrum						Spray Drift Task Force	

1987 Monsanto

P

Drift field evaluation

Plant Protection

Vegetative Vigor

201-2

Section

158.540

123-1(b)

40159301

Data (member)

Spray Drift Task Force Data (member)



#### PRECAUTIONARY STATEMENTS

#### HAZARDS TO HUMANS AND DOMESTIC ANIMALS

Causes substantial but temporary eye injury. Harmful if swallowed or inhaled. Avoid breathing dust. Avoid contact with skin, eyes or clothing. Do not contaminate food or feed products.

Do not use or handle this product in such a manner as to directly or through drift expose workers or other persons.

#### **ENVIRONMENTAL HAZARDS**

Do not contaminate water when cleaning equipment or disposing of wastes.

The active ingredient in this product is a non-selective broad spectrum herbicide. Do not handle or use in a manner that can result in accidental contact with desirable vegetation.

#### DIRECTIONS FOR USE

It is a violation of Federal Law to use this product in a manner inconsistent with its labeling.

For use by commercial pesticide formulators.

For formulation into end-use herbicide product intended for use on: fallow ground, pastures and sods, noncrop areas including: rights of way, industrial, recreational and public areas, forestry site preparation and release programs, site preparation or directed sprays to the floor of omamental nurseries and christmas tree farms, rights of way (ROW), Conservation Reserve Program (CRP), turfgrasses and grasses for seed production.

### **GLYPHOSATE TECHNICAL**

For Manufacturing Use Only

\*Active Ingredient: GLYPHOSATE\*\* 96%
\*Inert Ingredients: 4%
\*TOTAL 100%

Net Contents \_\_\_\_\_

- Dry basis
- \*\* Glycine, N-(phosphonomethyl)-

#### WARNING

Keep Out of Reach of Children

Statement of Practical Treatment

If swallowed: Drink 1 to 2 glasses of water or milk. Call a physician and get medical treatment. Never give anything by mouth to an unconscious person.

If Inhaled: Remove individual to fresh air. If not breathing give artificial respiration, preferably mouth-to-mouth.

If on Skin: Wash immediately with soap and water.

If in Eyes: Immediately hold eyelids open and flush with plenty of water for at least 15 minutes. Get medical attention.

See Side Panel for Additional Precautionary Statements

> Manufactured by CHEMINOVA AGRO A/S P.O. BOX 9 DK-7620 LEMVIG DENMARK

Row Crops: com, cotton, peanuts, sorghum, soybeans, sugarcane, barley, buckwheat, millet, oats, rice, rye, triticale, wheat, wild rice.

Citrus: alamondin, chironja, citron, grapefruit, kumquat, lemon, lime, mandarin orange, orange, pummelo, tangelo, tangerine, tangors.

Tree nuts: almond, beechnut, Brazil nut, buttemut, cashew, chestnut, chinquapin, filbert (hazelnut), hickory nut, macadamia nut, pecan, pistachio, walnut.

<u>Vine crops</u>: grapes and kiwi fruit. Tree Fruits: apple, apricots, cherry, loquat, mayhaw, nectarine, olive, peach, pear, plum/prune, quince.

Vegetables: artichoke(jerusalem), asparagus, beans (all), beet greens, beets (red, sugar). broccoli (all), Brussels sprouts, cabbage (all), cabbage (chinese), cantaloupe, carrot, cauliflower, casaba melon, celery, chard (swiss), chicory, collards, crenshaw melon, cucumber, eggplant, endive, garlic, gourds. ground cherry, honeydew melon, honey ball melon, horseradish, kale, kohlrabi, leek, lentils, lettuce, mango melon, melons, muskmelon, mustard greens, okra, onion, rape greens, parsley, parsnips, peas (all), pepper (all), persian melon, potato (irish and sweet). pumpkin, radish, rhubarb, rutabaga, spinach, squash, tomatillo, tomato, turnip, watercress, watermelon, yams.

Small Fruits and Berries: blackberry, blueberry, boysenberry, cranberry, currant, dewberry, elderberry, gooseberry, huckleberry, loganberry, olalliberry, raspberry.

<u>Forage Crops</u>: alfalfa, forage grasses, forage legumes.

Tropical Crops: acerola, atemoya, avocado, banana (plantains), breadfruit, canistel, carambola, cherimoya, cocoa beans, coffee, dates, figs, genip, guava, jaboticaba, jackfruit, longan, lychee, mango, papaya, passion fruit, persimmons, pineapple, pomegranate,

